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Niagara Falls

in Half-tone.

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..NIAGARA FALLS..

IN HALF-TONE.

TEXT BY HOLMAN D. WALDRON.

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THE FALLS OF NIAGARA.

NIAGARA, THE GRAND CATARACT, is without doubt the greatest natural phenomenon of America, if not of the world. No other attraction draws with equal force the tourist and pleasure-seeker. At all seasons and under all circumstances, with every varying effect of sunlight, moonlight or the dazzling glare of electric illumination, the scene is always sublime. The ceaseless monotone of its thunderous roar, the vast clouds of spray that catch in their depths the dancing sunbeams which transform them into the hues of a thousand rainbows, or imprison the moonbeams to form the beautiful lunar-bow, are never silent, never absent, and in the memory of hundreds of thousands who have witnessed it the grand display lives on.

Says Charles Dickens in his American Notes: "I think of it in every quiet season now; still do those waters roll and leap, and roar and tumble, all day long; still are the rainbows spanning them a hundred feet below; still, when the sun is on them, do they shine and glow like molten gold; still, when the day is gloomy, do they fall like snow, or seem to crumble away like the front of a great chalk cliff, or roll down the rock like dense white smoke. But always does the mighty stream appear to die as it comes down, and always from its unfathomable grave arises that tremendous ghost of spray and mist which is never laid; which has haunted this place with the same dread solemnity since Darkness brooded on the deep, and that first flood before the Deluge — Light — came rushing on creation at the word of God."

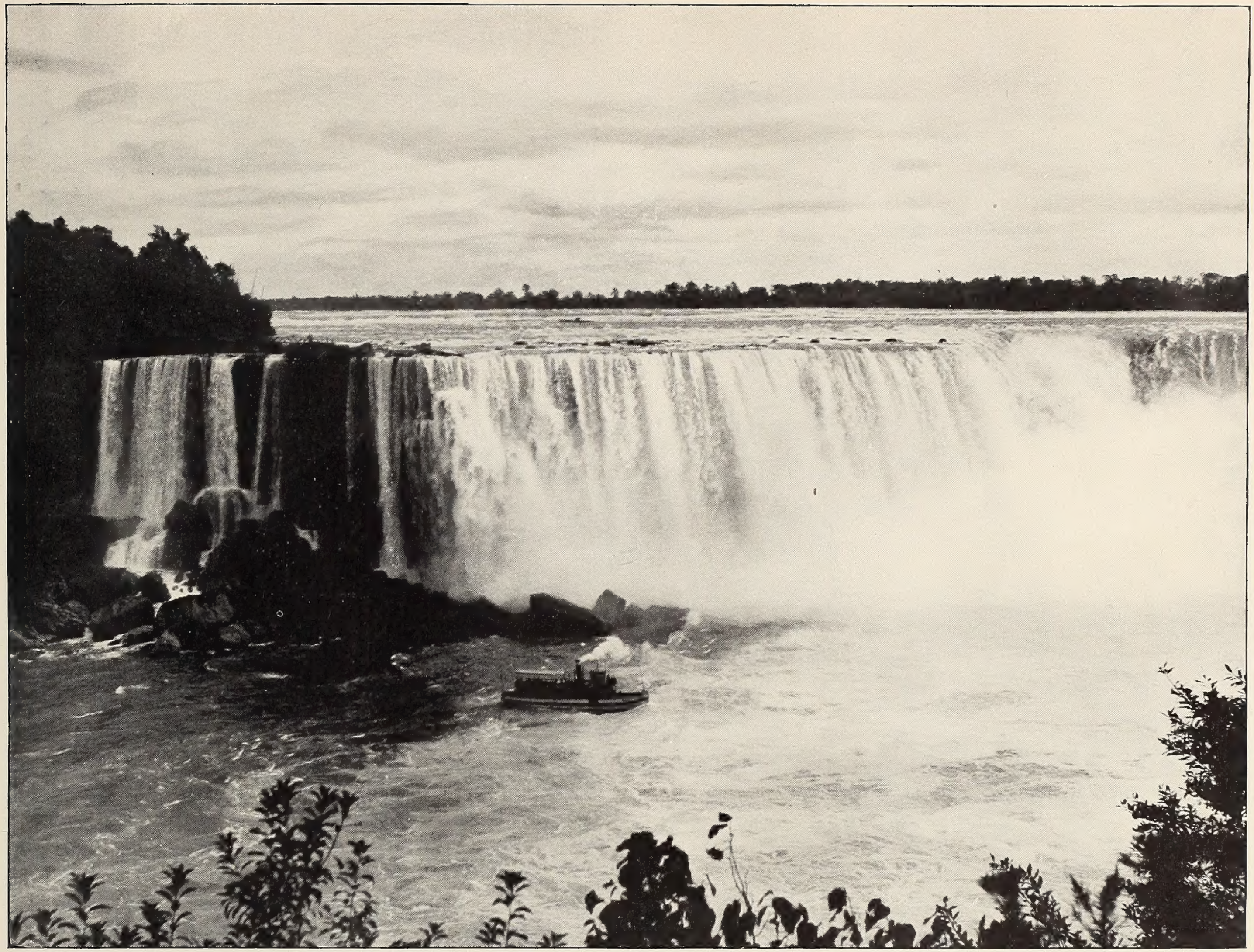
From the largest inland reservoirs of water on earth, the Great Lakes, Ontario excepted, draining with their numerous tributary streams an area of more than one hundred and fifty thousand square miles, flows the Niagara River — northward — through thirty-six miles of territory to connect Lake Erie with Lake Ontario. Through its channel and that of the St. Lawrence, which is the outlet of Lake Ontario, the Great Lakes find the sea.

Thus the Niagara River is one link in the chain which conveys the waters of Lake Superior to the Atlantic Ocean. It is no purling stream, but forms a mighty prelude to the cataract. From Lake Erie to the Falls its average depth is twenty feet, and at some points it is over two miles wide. At the point where it takes the plunge over the precipice this is narrowed down to 3,600 feet, or less than three-fourths of a mile.

The immense volume of water daily discharged over the Falls of Niagara has been variously estimated. Gauged by the velocity of the current and the depth of the river at a selected point, 1,500,000,000 cubic feet per minute has been named as the figure; another names 100,000,000 tons as passing through the Whirlpool — below the Falls — every hour. The ordinary mind is, however, most impressed by the estimate that 5,000,000,000 barrels go over every twenty-four hours; 211,836,853 barrels an hour; 3,536,614 barrels a minute; 58,343 barrels every second of time.

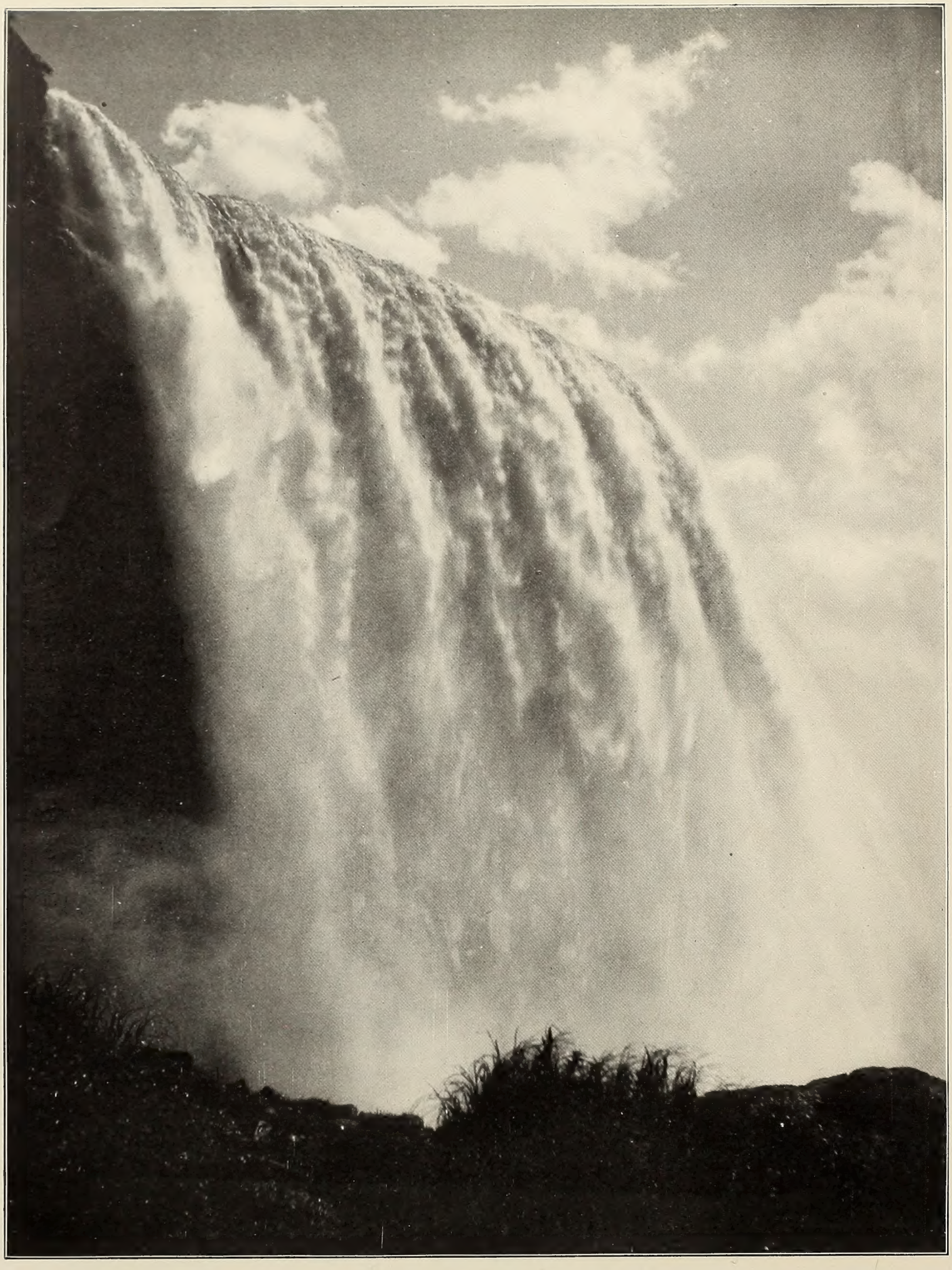
It is estimated that half a million tourists, apart from the passing throng, visit Niagara each season. For their accommodation are many mammoth hotels and every facility for the close inspection of every point of interest connected with the cataract. Since the approaches to the Falls passed, in the year 1885, from the hands of private individuals into the keeping of the State of New York upon the one side and the Dominion of Canada upon the other, free reservations have been maintained where bountiful Nature has been supplemented by a generous outlay of money upon the setting of this unrivalled gem of God's creation.

THE LAKESIDE PRESS, PORTLAND, MAINE.



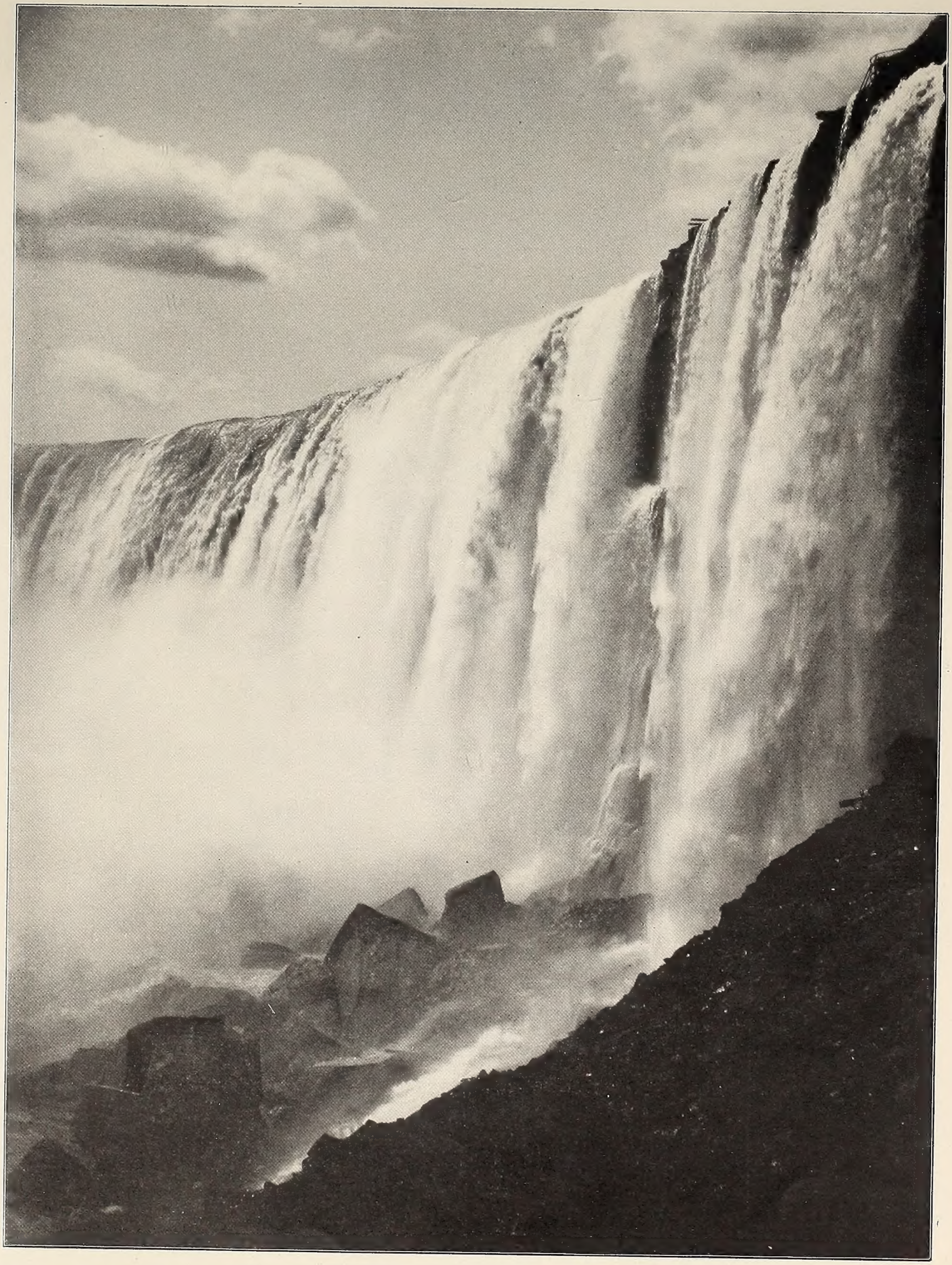
THE HORSESHOE FALL, FROM THE CANADA SIDE.

This view is one looking directly into the heart of the Falls. The heaviest weight and greatest depth of water is in the apex, which now has more the appearance of an angle than a horseshoe curve. The angular look is, however, disappearing ; recent breaks in the rock edge of the Horseshoe or Canadian Fall have tended to restore to its contour the rounded outline which won it its name. This result of the breaking down of the rock has been observed for about ten years. From the best authority, the rim of the horseshoe is retrograding at the rate of from four to five feet a year. On the other hand, the American Fall, which carries a much thinner sheet of water, is receding so slowly that its rate is concealed by errors of survey. It is now known that the drainage of fully one-thirtieth part of the entire area of the United States pours over these Falls and that the volume of water is 275,000 cubic feet in a second. An estimate which fixes the volume of Niagara best in the average mind is that 58,343 barrels are discharged each second of time. Recently we stood upon the steel arch railway bridge and dropped a lump of coal weighing one pound into the rapids which flow beneath ; six seconds elapsed ere it struck the water. If, on the same principle, six seconds should elapse before the first discharge from the brink of Niagara reached the foot of the cataract, there should be in the one flood pouring over the Falls 350,058 barrels of water.



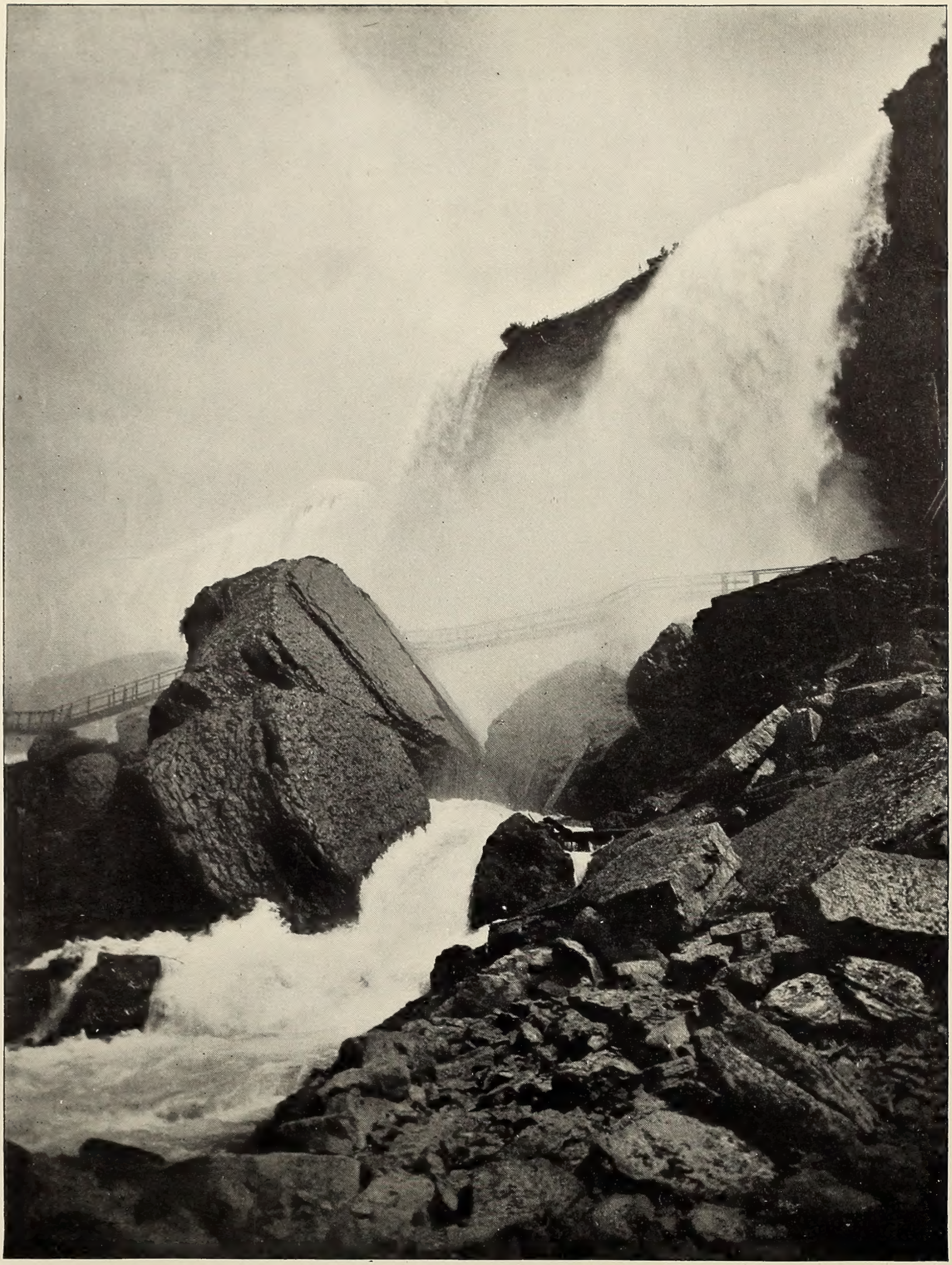
THE AMERICAN FALL.

The American Fall consists of the American and Centre Fall, divided by Luna Island. It is eleven hundred feet wide, nearly one-fourth of a mile, and its flood makes a sheer descent of one hundred and fifty-nine feet from the crown to the base of the precipice. Careful estimation places the volume of water passing over the American Fall at one hundred and fifty million cubic feet every minute of time. This torrent takes the plunge in a billowy sweep, but is caught by craggy points and thrown out at a hundred places in wild and singular beauty, an ever-varying irregularity, and which clothes its falling water in snow-white drapery, its peculiar charm. Its torrent is not so great, nor is its fall so far, as that of the immense volume of water which passes over the Horseshoe Fall, a huge amount of rock accumulated at the foot of the former reducing the descent, yet the most of interest centres about the American Fall; it is the easiest reached and the nearest approached. The parapet of Prospect Park is poised immediately above the brink of the cataract.



THE HORSESHOE FALL.

The Horseshoe Fall extends from Goat Island to the Canadian shore, its width being estimated at 2,376 feet, and its perpendicular fall 165 feet. An enormous volume of water passes over this Fall, estimated at ten times the amount discharged by the American Fall. Full thirteen hundred and fifty millions of cubic feet go over every minute of time. The ordinary mind can best conceive of this figure by the fact that it rolls majestically over the brink in a solid wall twenty feet thick. At the angle of the Horseshoe it is particularly deep, and takes on a distinctively deep-green color due to this fact. The fall of water is more even here than over the American Fall, and preserves a more compact form as it meets less of rock obstruction. It is within the bend of the Horseshoe that the wearing away of the precipice, the receding of the Falls, at present most occur. Evidences are not wanting to show where immense slices of rock have fallen into the gorge, explaining the rugged pathway below. Within twenty-five years more than twenty feet in width and four hundred feet in length have gone down.



BENEATH THE CENTRE FALL—ROCK OF AGES.

One of the most artistic of Niagara views. To the right is the Centre Fall, descending from between Goat Island and Luna Island, the latter just appearing above the mists, and the long line of the American Fall disappearing in the perspective. Behind the Centre Fall lies the celebrated Cave of the Winds formed by the gradual wearing away of the shaly substratum of the precipice by the ceaseless fall of water, leaving the more solid limestone rock projecting overhead some thirty feet from the base. Over this open cave, entered first by man in the year 1834, flows the mighty cataract. The cave is one hundred feet in height, one hundred feet in width, with a depth of sixty feet. It is a place of perpetual storm, occasioned by the tremendous pressure of the atmosphere. Clouds of spray, hurled with great violence along the floor of the cavern, meet the farther wall and ascend, combing like surf to the roof. To reach the cave one descends an enclosed staircase from Goat Island, where the perpendicular height of the bank is one hundred and eighty-five feet. Thence to the right a short walk reveals the entrance to the Cave of the Winds. Returning to the entrance of the cave a series of platforms and bridges enables one to walk out directly in front of the American Fall, and only forty feet distant. The roar and general tumult about this, the Hurricane Bridge, are very impressive. A large mass of detached rock at the foot of the Fall has been aptly named the Rock of Ages.

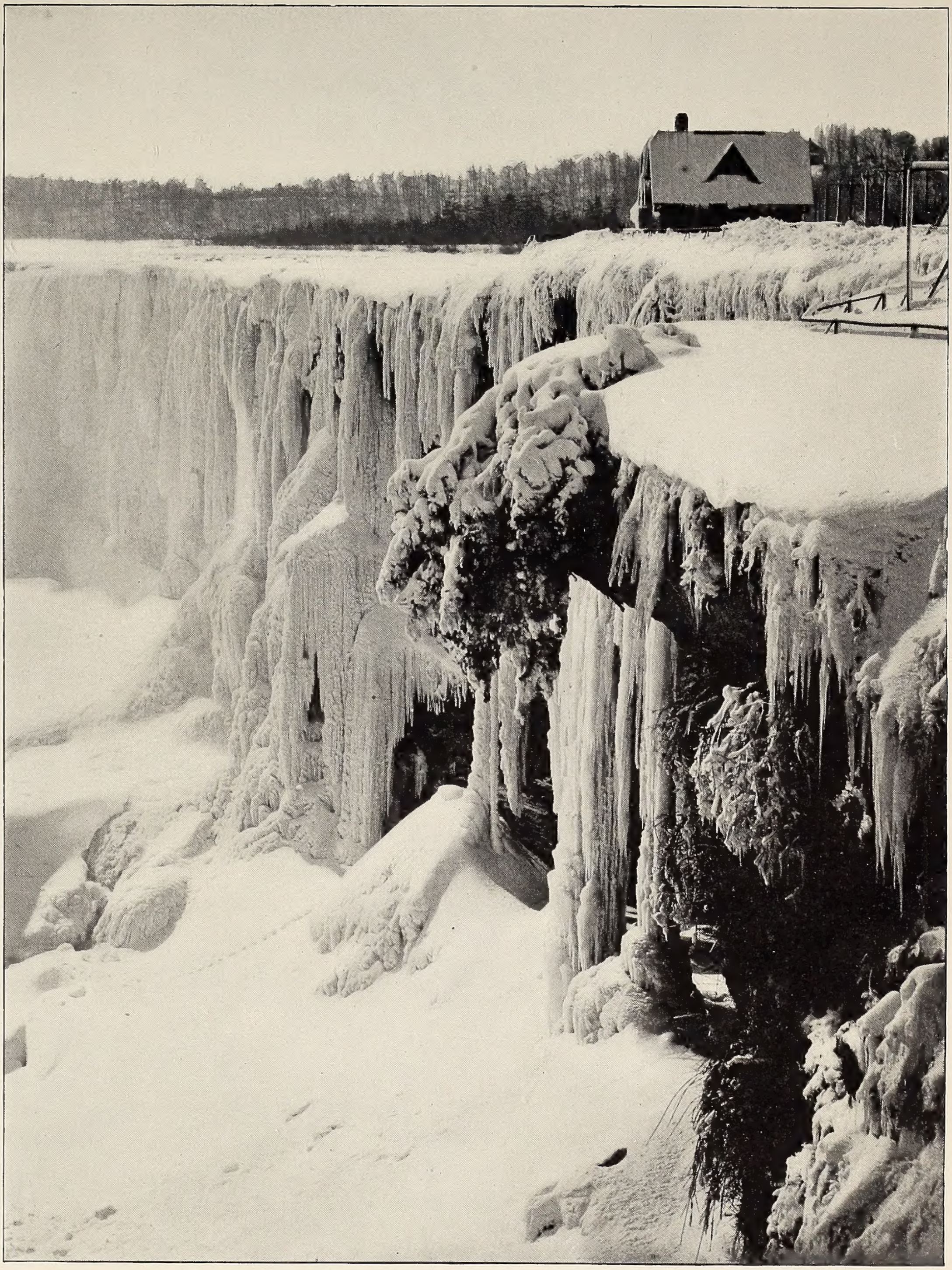
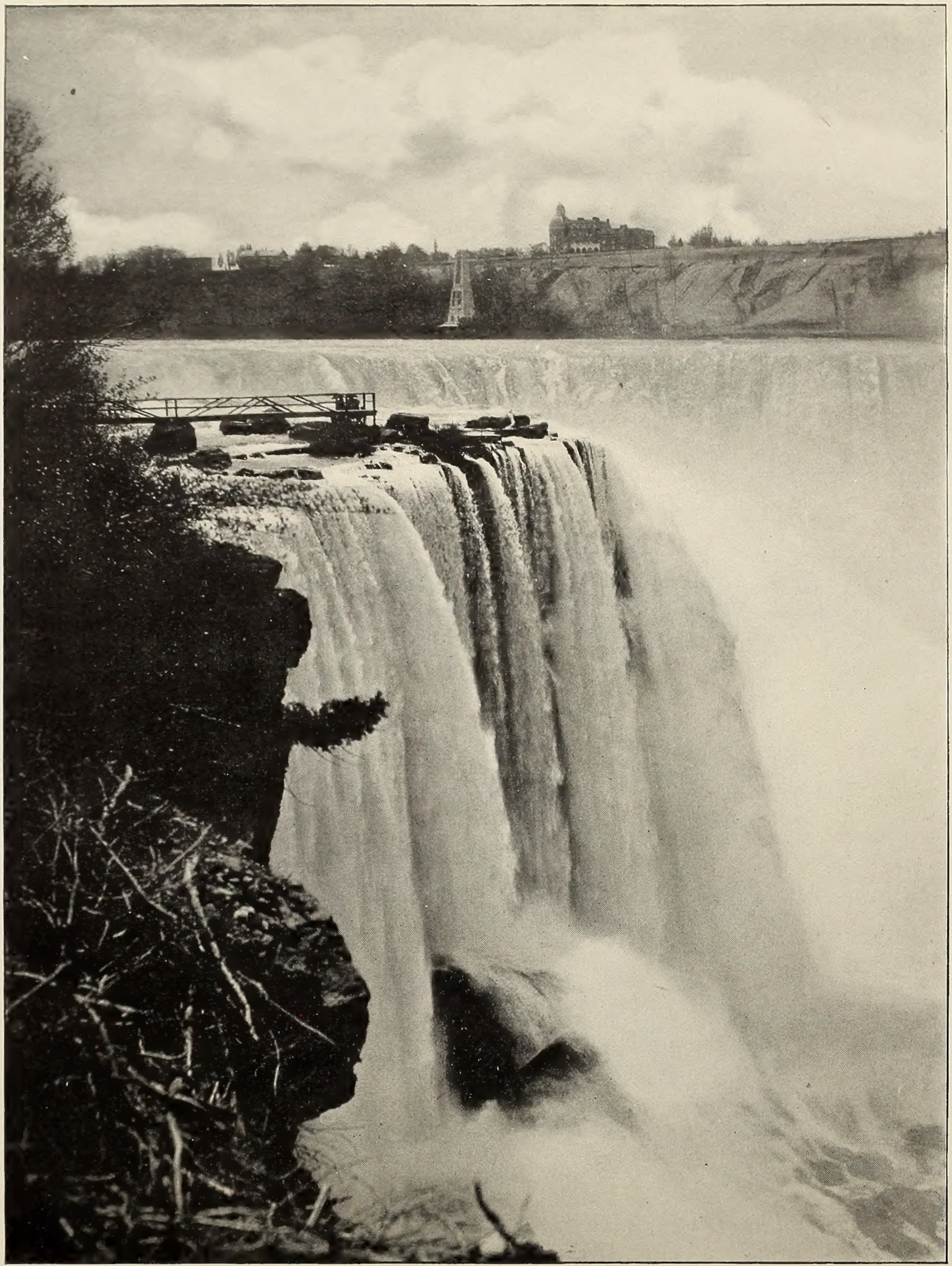


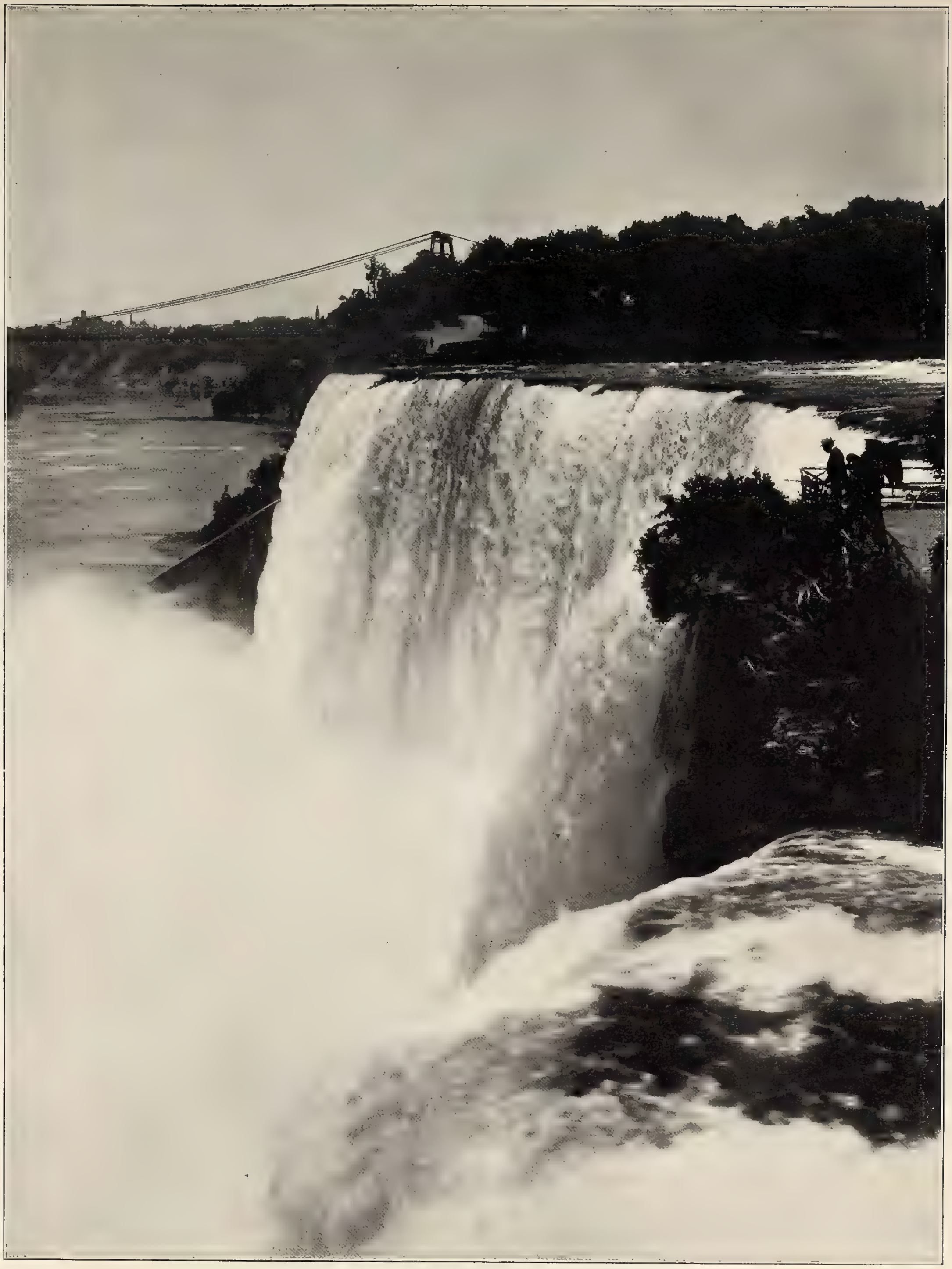
TABLE ROCK — WINTER.

Table Rock formed one of the most famous outlooks upon Niagara previous to its fall in 1850. At its best it was a huge shelf of rock overhanging the precipice at the Canadian shore end of the Horseshoe Fall. Like Longfellow's village of Grand Pré, "Nought but tradition remains" of this famous pile. Large portions of it have fallen from time to time. In 1818 a mass one hundred and sixty feet long and forty feet wide broke away and fell into the river; and in 1828 three immense masses fell with a shock like an earthquake. Again, in 1829, another fragment fell; and in 1850 a portion two hundred feet in length and one hundred feet thick. On one of these occasions some forty or fifty persons had been standing on the rock a few moments before it fell. The work of demolition still went on, for another portion of Table Rock fell in 1857. In 1867, a large crack or seam having formed around it near the road, it was deemed unsafe and the Canadian Government caused it to be blasted away. Those who consider the contour of Niagara unchanged from year to year may take a lesson in the recedence of the Falls by this disappearance of Table Rock, one of its greatest features, all within the present century.



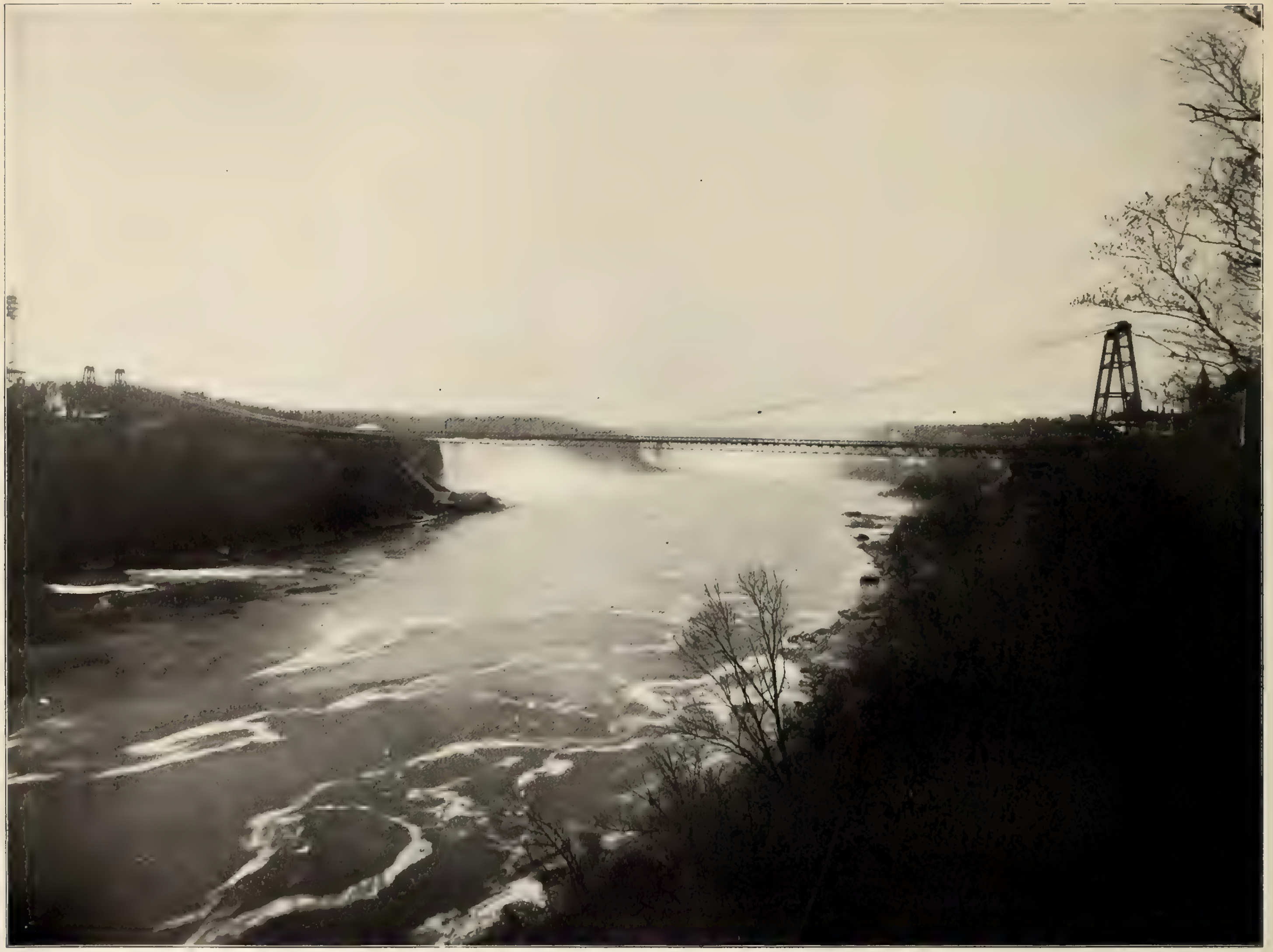
THE HORSESHOE FALL, FROM TERRAPIN ROCKS.

The Horseshoe Fall presents an entirely different aspect from the American Fall. Although by far wider and its descent greater, it has not, from this point at least, the appearance of power possessed by its rival, whose flood goes over in one grand discharge. Especially from Goat Island the Horseshoe Fall is disappointing, for at its edges it is ragged and weak. This is due to the fact that the waters are drained toward the centre of the Fall. A collection of boulders, scattered upon the very brink of the Horseshoe Fall, bear the name of the Terrapin Rocks. Upon these rocks was built in the year 1833 the Terrapin Tower, to be condemned as unsafe and blown up in 1873. Niagara has a tower at present, the one on Falls Street, which is a marvel of construction and height. It is but one of those new departures and improvements which the present decade has inaugurated. The visitor who, twenty years ago, paid his half dollar to enter within the high board stockade which surrounded the entire display only saw the gem itself; to-day we see it publicly displayed and in a setting which magnifies its beauty.



LUNA ISLAND, DIVIDING THE AMERICAN AND CENTRE FALLS.

Luna Island literally hangs suspended upon the torrent's brink, and so delicately poised is it that many aver that the island trembles in the mighty flood. This statement is undoubtedly the fact, though heightened by the imagination. A bridge from Goat Island, the largest by far of the islands at the Falls, connects the two, crossing the stream which forms the Centre Fall. Carriages make the grand tour of Goat Island, but one must visit Luna Island on foot; its size is inconsiderable. Here, protected by an iron rail from possible danger, one may dip the hand in the torrent as it leaps to its plunge. Beware, however, how you venture; one of the most distressing of Niagara's tragedies occurred on Luna Island. On June 21, 1849, a family party from Buffalo were making a tour of the Falls. When about to leave Luna Island, all in fine spirits, a young man of the party, while romping with a little daughter of his host, caught her in his arms and advancing to the water's edge exclaimed, "I am going to throw you in!" The child in struggling to escape was precipitated into the water, the young man with a wild cry sprang to save her and immediately both were swept over the Fall to instant death.

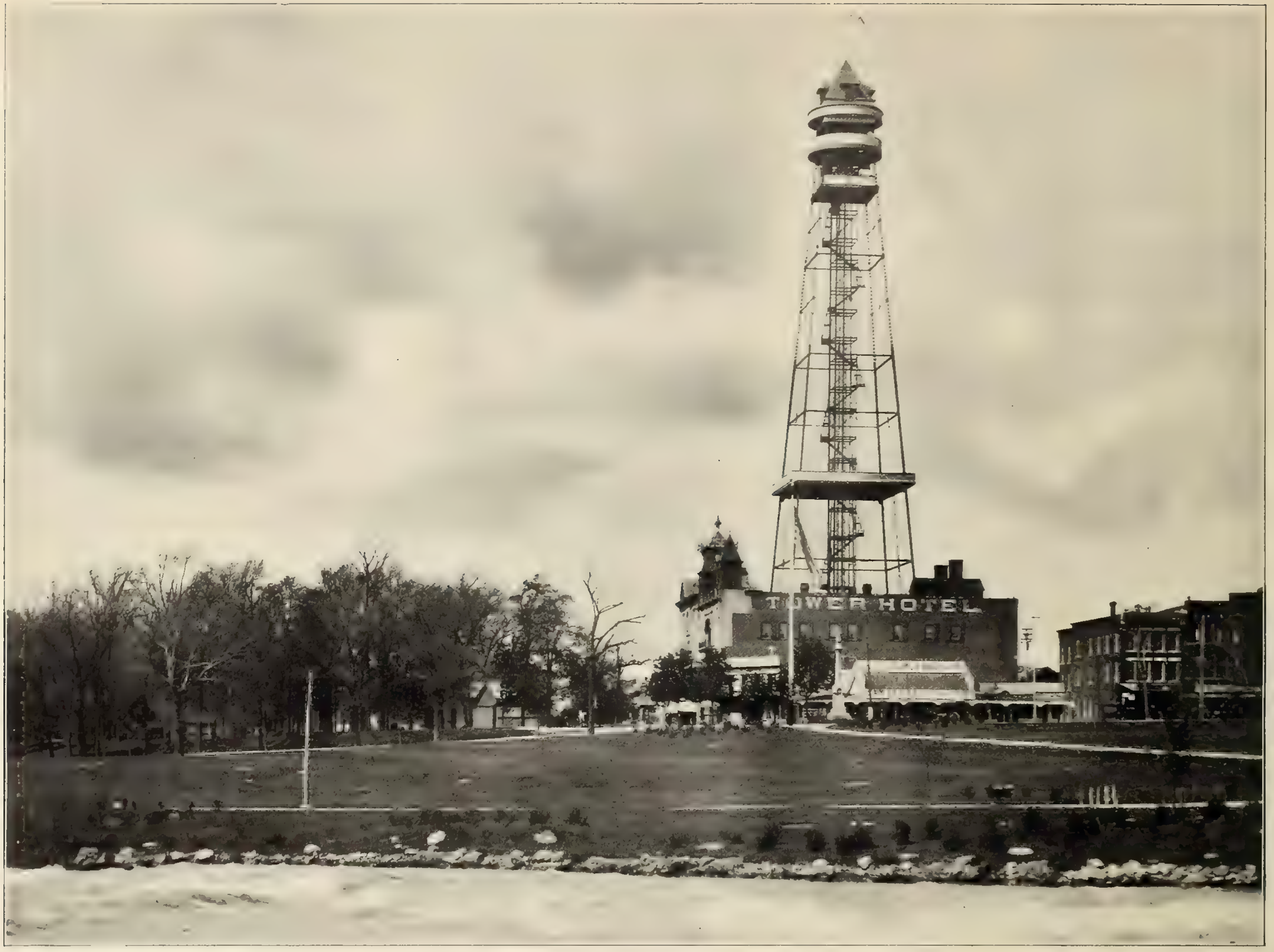


THE RIVER BELOW THE FALLS.

The river below the Falls flows through a gorge it has itself excavated during the infinite years that have elapsed since it began its retrograde movement, at Queenston, seven miles below the present cataract. After passing the Falls the river narrows rapidly and takes an abrupt turn to the right. The gorge varies in width from two hundred to four hundred yards, and corresponds in depth to the surface of the river with the height of the Falls. Between the Falls and the Whirlpool Rapids the depth of water varies from seventy-five to two hundred feet. The United States Geological Survey have made soundings to as near the Whirlpool Rapids as they dare go, finding constantly increasing depth of water, until one hundred and seventy-nine feet was reached and that some distance above the head of the rapids. At the Whirlpool Rapids it is estimated at two hundred and fifty feet, and in the Whirlpool four hundred feet. This represents the depth of water alone. The accumulation of stone, gravel, shell and debris, which during countless ages have fallen into the gorge, lie above the original bottom, which would be but for these as deep again. The bridge above is the suspension foot-bridge, connecting the two International parks.

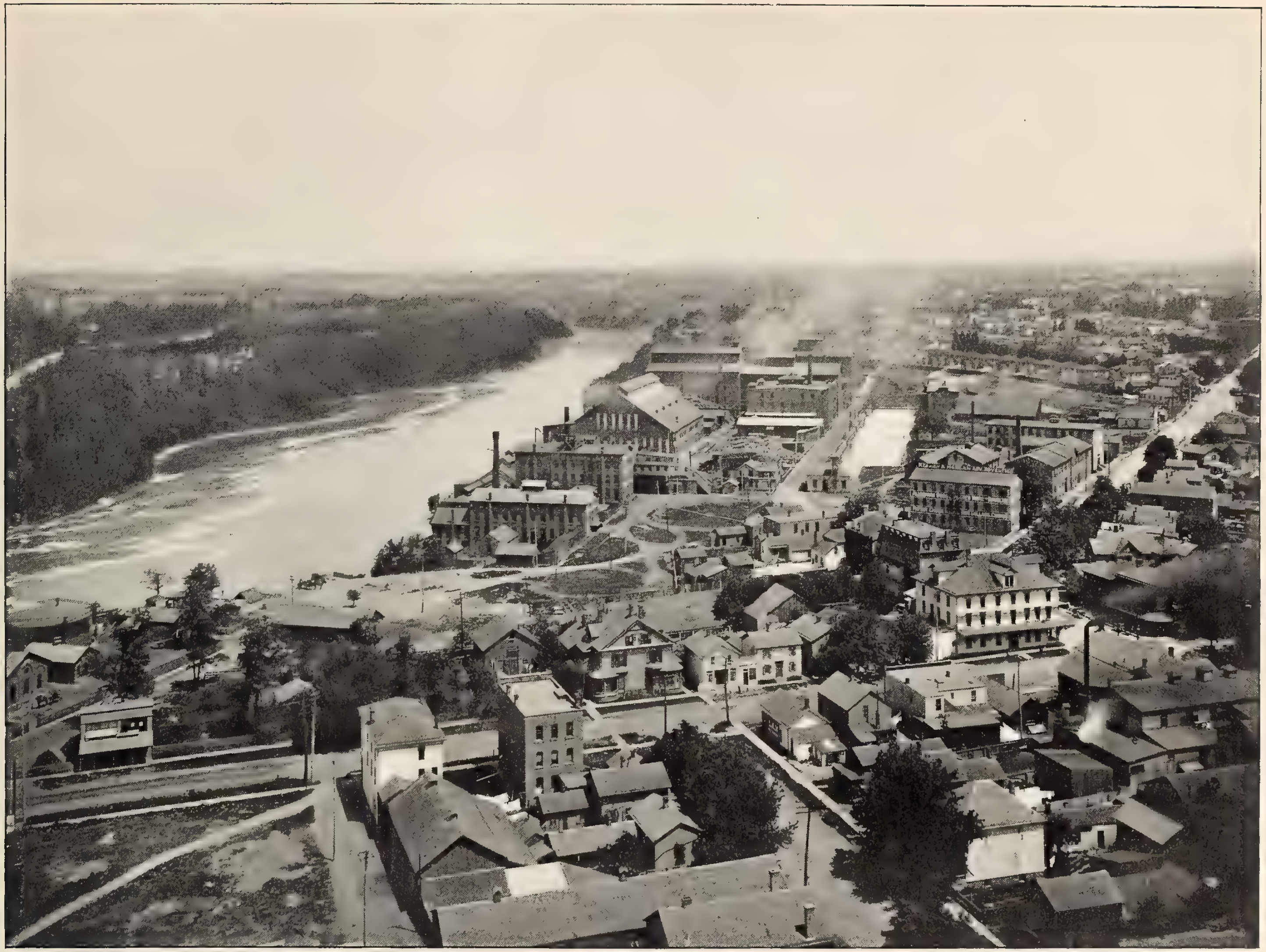
THE AMERICAN RAPIDS.

The river, flowing each side of Goat Island from its head to the verge of the cataract, descends fifty-five feet in one-half mile upon the Canadian, and forty feet in the same distance upon the American side. It breaks into rapids the entire width from shore to shore immediately upon reaching the head of the island, increasing its speed from seven to thirty miles an hour. The view from the bridges forms a scene which must wake enthusiasm in the breast of the most *ennuied* type of humanity. The massive breast of water is seen hurrying on to its final plunge over the dread precipice, whose rounded edge is, but a few yards farther down, a maddened, tortured flood, broken into foaming billows, until they meet the verge of that magnificent steep which hurls them into the boiling caldron below.



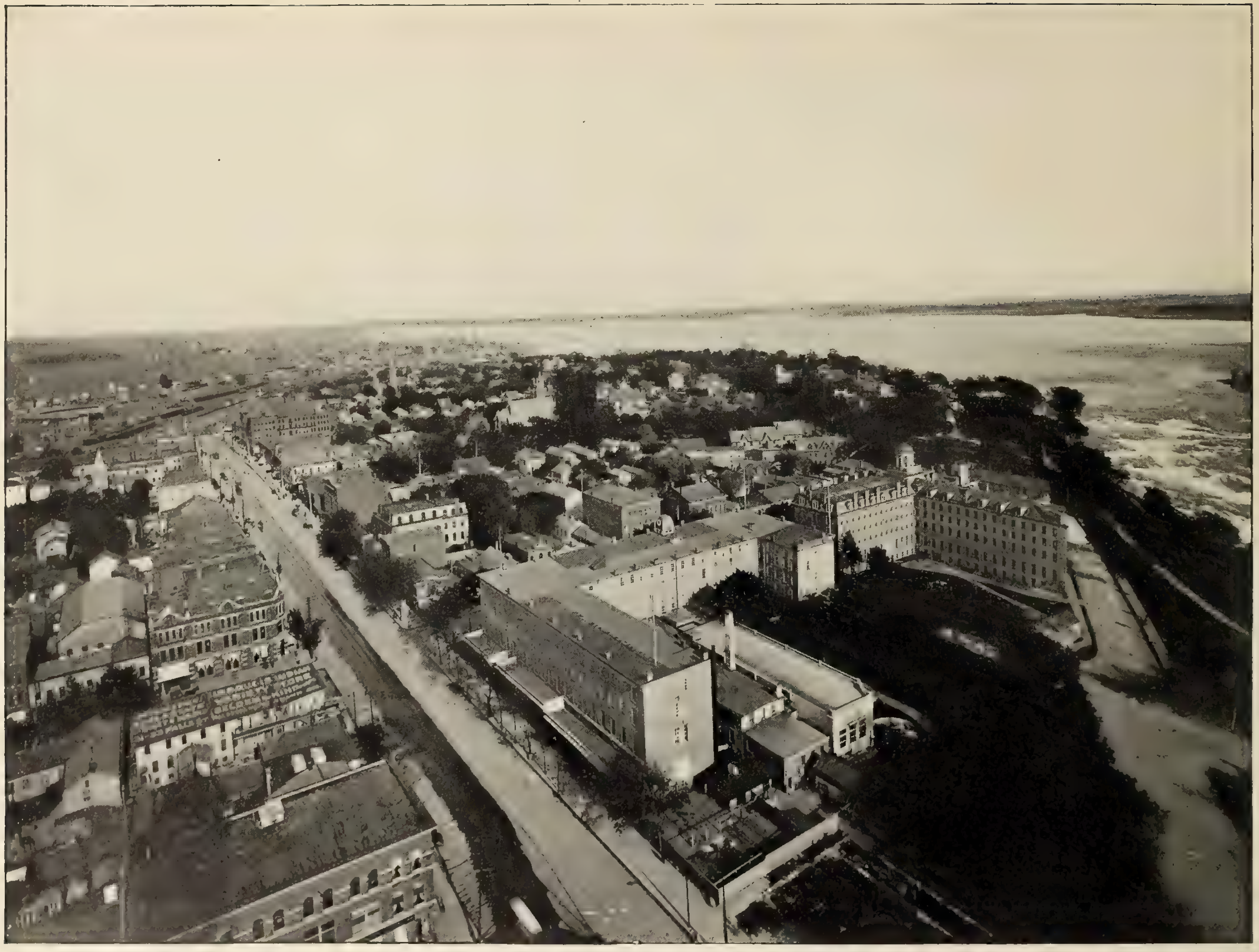
THE OVERLOOK TOWER, NIAGARA FALLS, NEW YORK.

The Overlook Tower at Niagara Falls, which from its commanding presence has been caught by the camera in several of our views, stands just outside Prospect Park on the American side. It is a structure of very recent completion, a strong, web-like erection of steel, three hundred feet in height. Two passenger elevators run from the street to the top, besides which there is a staircase if one prefers. The visitor to the top of the tower stands three hundred feet above the brink of the Falls, and four hundred and ninety feet above the surface of the river directly beneath the foot suspension bridge, which hangs one hundred and ninety feet above the water. For purposes of comparison it is interesting to reflect that, high as seems the tower, and high the Falls, both together do not equal the height of the National Monument to Washington (550 feet) by sixty feet. The camera has caught a series of views from the top of the Overlook which are next presented. They do not, however, reveal the more distant objects which are visible from that lofty view-point.



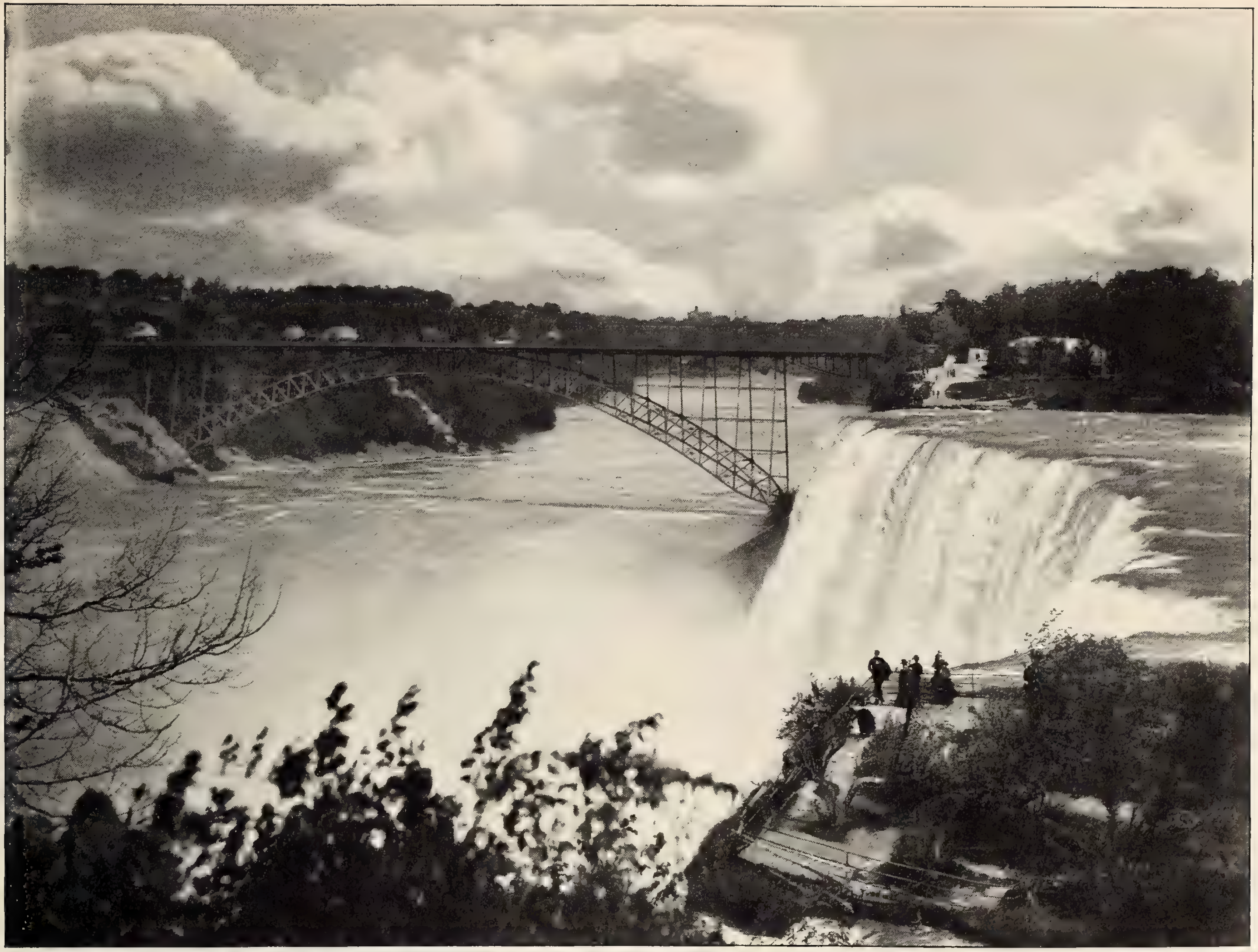
FROM THE OVERLOOK TOWER—LOOKING NORTH.

The view north from the tower embraces the milling district of Niagara Falls, New York. These mills stand upon the very edge of the gorge, and in their rear appear the waters of the surface canal which furnishes their water-power. The elevation of the mill-sites does not appear here satisfactorily, but in another of our views, showing the milling district from the river, the torrents of water from the various tail-races show to advantage the plan of the water-power furnished by this canal. Here the surface of the river is shown all streaked with foam from its late plunge over the Falls. Just below the bend in the stream, shown in the middle distance, the river breaks into the tumult of the Whirlpool Rapids. Across these rapids are stretched the two steel railroad bridges. All points of interest about the grand cataract are within easy distance from the principal hotels, and one who was familiar with the vicinity a decade ago will be agreeably surprised by the present facilities for getting about.



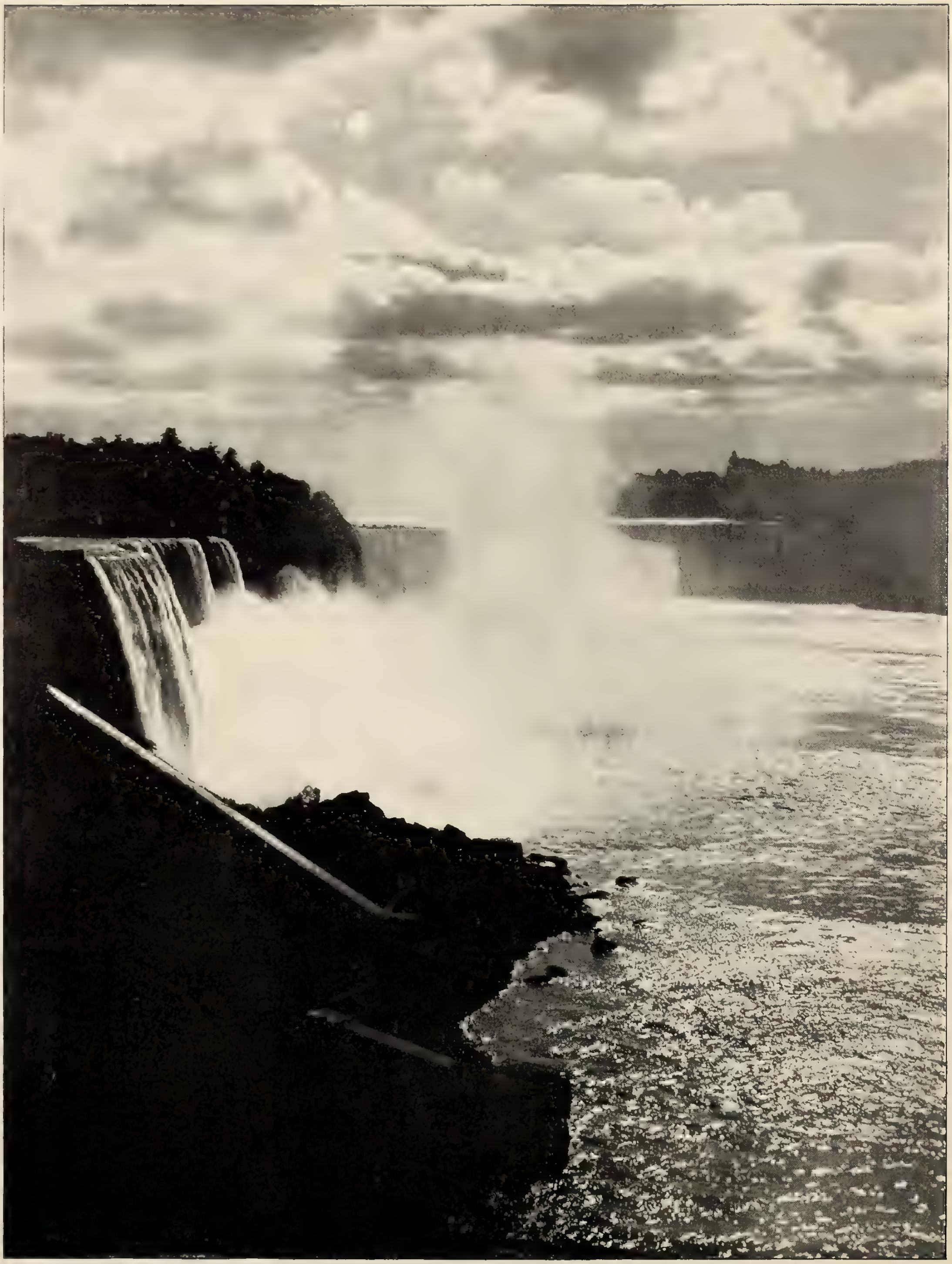
FROM THE OVERLOOK TOWER — LOOKING SOUTH.

A view from the tower looking south shows the upper Niagara River and its great breadth above the Falls. It shows also where the waters first break into rapids opposite the head of Goat Island, and at the extreme right of the picture the point of that island itself. Here are the two largest hotels upon the American side of the river, the Cataract House and the International Hotel, whose windows overlook the American Rapids and Prospect Park. The road in the foreground leads to Goat Island Bridge. Twenty miles away in this direction lies the great city of Buffalo, New York, the river flowing from south to north between the two great lakes, Erie and Ontario. During the summer season many excursion steamers descend the river from Buffalo to Chippewa, a village on the Canadian shore where sight-seers complete the tour of Niagara Falls by trolley cars over the Niagara Falls Park & River Railway, which extends along the gorge to Queenston, a distance of fifteen miles. The two hotels here prominently shown have ample accommodations for one thousand guests, and during the height of the summer season their capacity is fully tested.



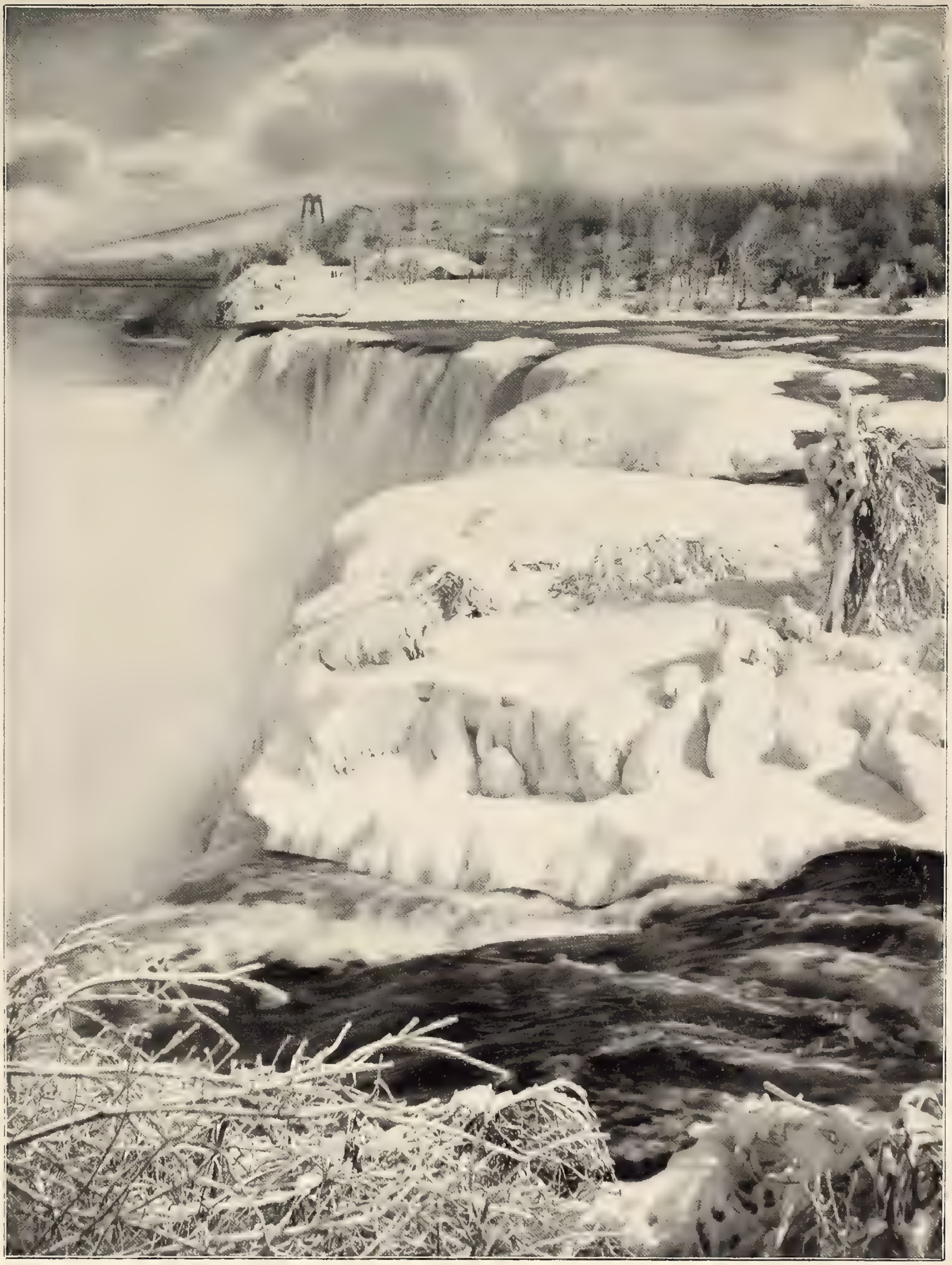
AMERICAN FALL FROM GOAT ISLAND, SHOWING THE STEEL ARCH BRIDGE.

This is a remarkably fine coign of vantage from which to view the American Fall, as the glorious result obtained with the above plate will amply testify. There are two steel arch bridges at the Falls ; this, which is for foot, wheel and trolley only, spans the gorge immediately in front of the cataract. It should not be confounded with the steel arch railway bridge of the Grand Trunk Road, which spans the gorge below on the site of the original old Suspension Bridge, constructed in the year 1858. Speaking of bridges : Blondin stretched his frail two-inch cable across the gorge here, midway between the steel arch foot-bridge and the face of the Fall, where the distance across is nine hundred feet and the distance down a sheer two hundred. The picture will show what a frightful position was this in which to gambol upon a slack rope, and yet he did it (what admirable nerve) and varied his hair-raising exploits by now trundling a wheelbarrow over in advance and anon carrying a comrade upon his back. This was in the year 1859. Then in 1873 Signor Bellini added a new feature to the exploits of Sam Patch (an individual who has nearly passed from mortal ken and yet who was the original bridge-jumper) and Blondin, by jumping from his cable, which was stretched from Prospect Point to a point opposite the old Clifton House of pleasant memory. He was sustained from somersaulting in his descent by an elastic cord which was fastened to his cable.



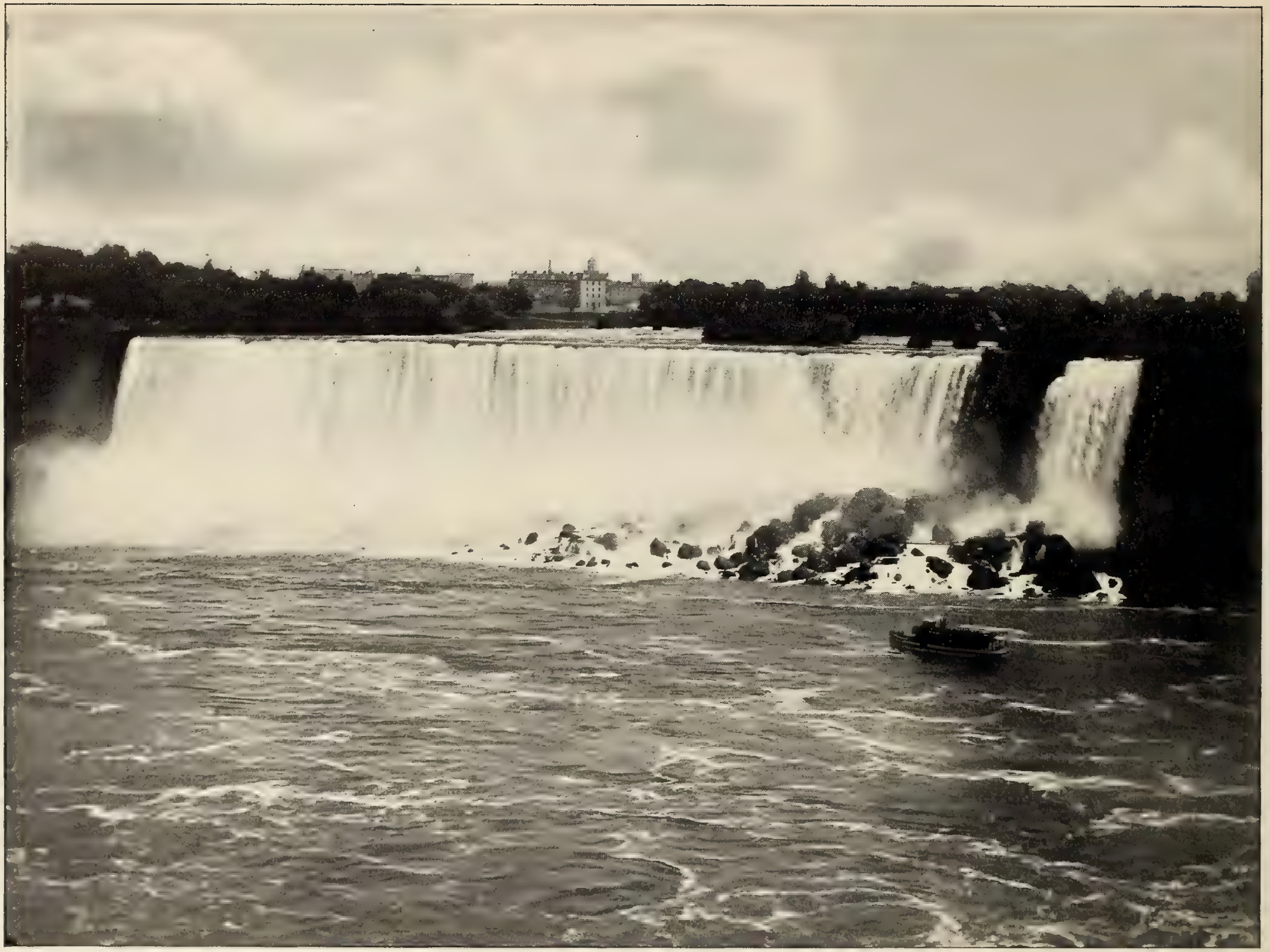
MOONLIGHT ON NIAGARA, FROM NEW STEEL ARCH BRIDGE.

Weirdly beautiful is the moonlight effect upon these troubled waters, and fascinating to a degree. This, by the way, reminds us of the numerous pitiful beings who have succumbed to its fatal influence and taken the final plunge to eternity. Among the most interesting of Niagara characters is that "Hermit of the Falls," Francis Abbott, who met the death he had so long courted in the year 1831. This hermit belonged to a good English family, so says tradition, and evidently had reasons for his seclusion. For two years he lived beside the cataract, a gentlemanly and accomplished young man, having little intercourse with others. He wrote a great deal, so we are told, but always in Latin and all manuscripts were destroyed as soon as written. He loved the moonlight and would wander about the islands on the brink when all save himself had sought slumber. Heedless of danger, a favorite pastime was with him to walk out beyond the edge of the cataract on an eight-inch stick of timber which projected from one of the islands. He seemed never at rest during the darkest and wildest nights, and has been seen pacing his narrow timber in the face of the mighty downpour at all hours. Not content with contemplation of, he regularly bathed in, those turbulent waters, but at last they claimed him, and he was drowned at the foot of the American Fall near the station of the inclined railway.



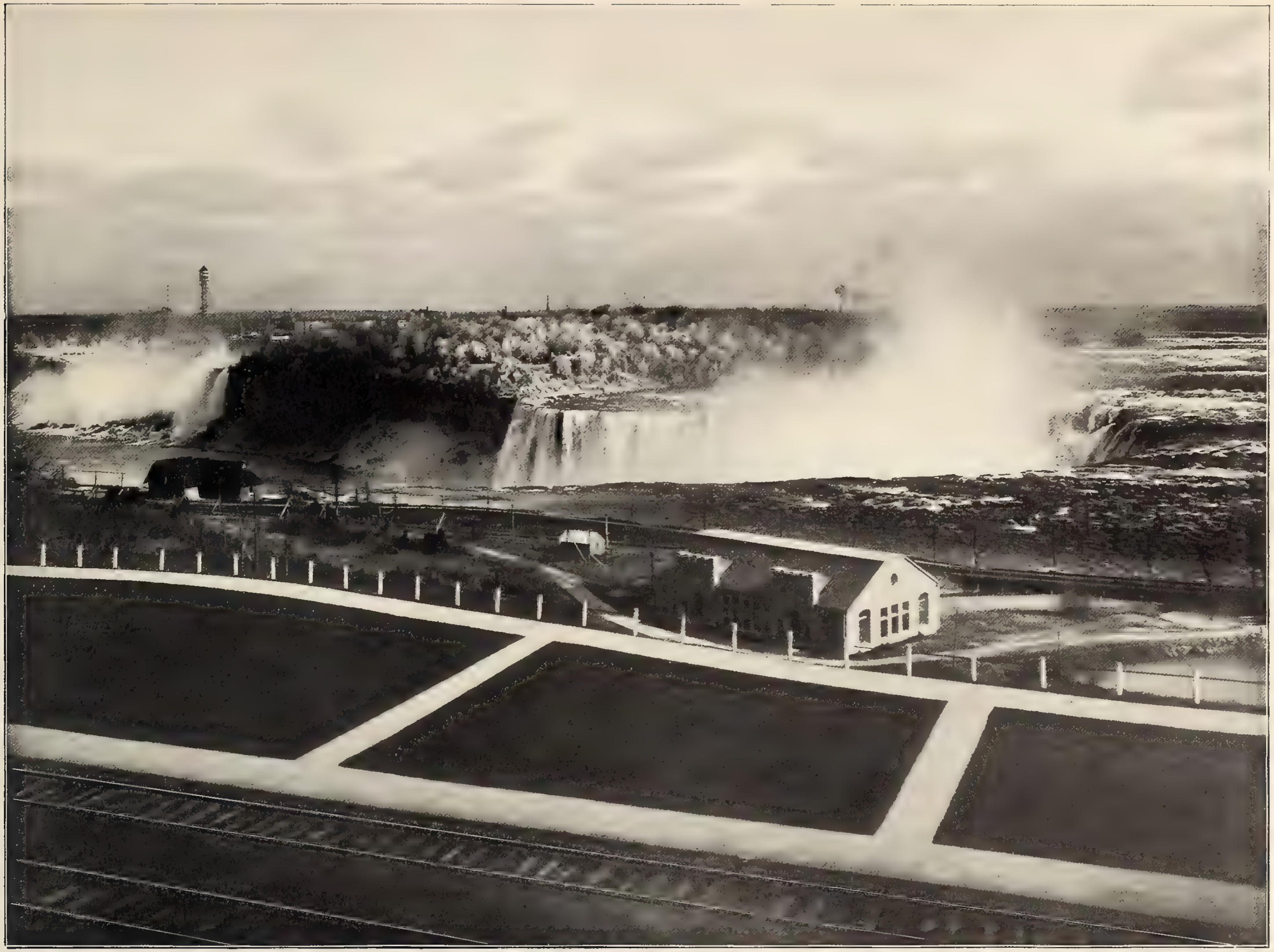
LUNA ISLAND, DIVIDING THE AMERICAN AND CENTRE FALLS—WINTER.

To vast numbers who have never visited Niagara the name of Luna Island is familiar from the frequency with which are met frost pictures of winter foliage upon this wonderful little isle. Bathed as it is in the spray of the cataract, the Frost King makes it his especial playground. The falling mists are congealed upon tree and twig, rock and bridge-timbers, ever accumulating to swell them to undue proportions. It is beautiful under any conditions, but especially brilliant when the sunshine adds to the display. In the foreground of this picture one sees the dark waters of the Centre Fall hurrying toward the brink. Farther on is Luna Island, then the American Fall, crowned with an ice-cap, followed in perspective by Prospect Park, with scattered visitors showing black against the glaring whiteness of the winter landscape. By comparison one will readily perceive that this is taken from the same view-point as the picture upon the opposite page, one showing the summer and the other the winter scene.



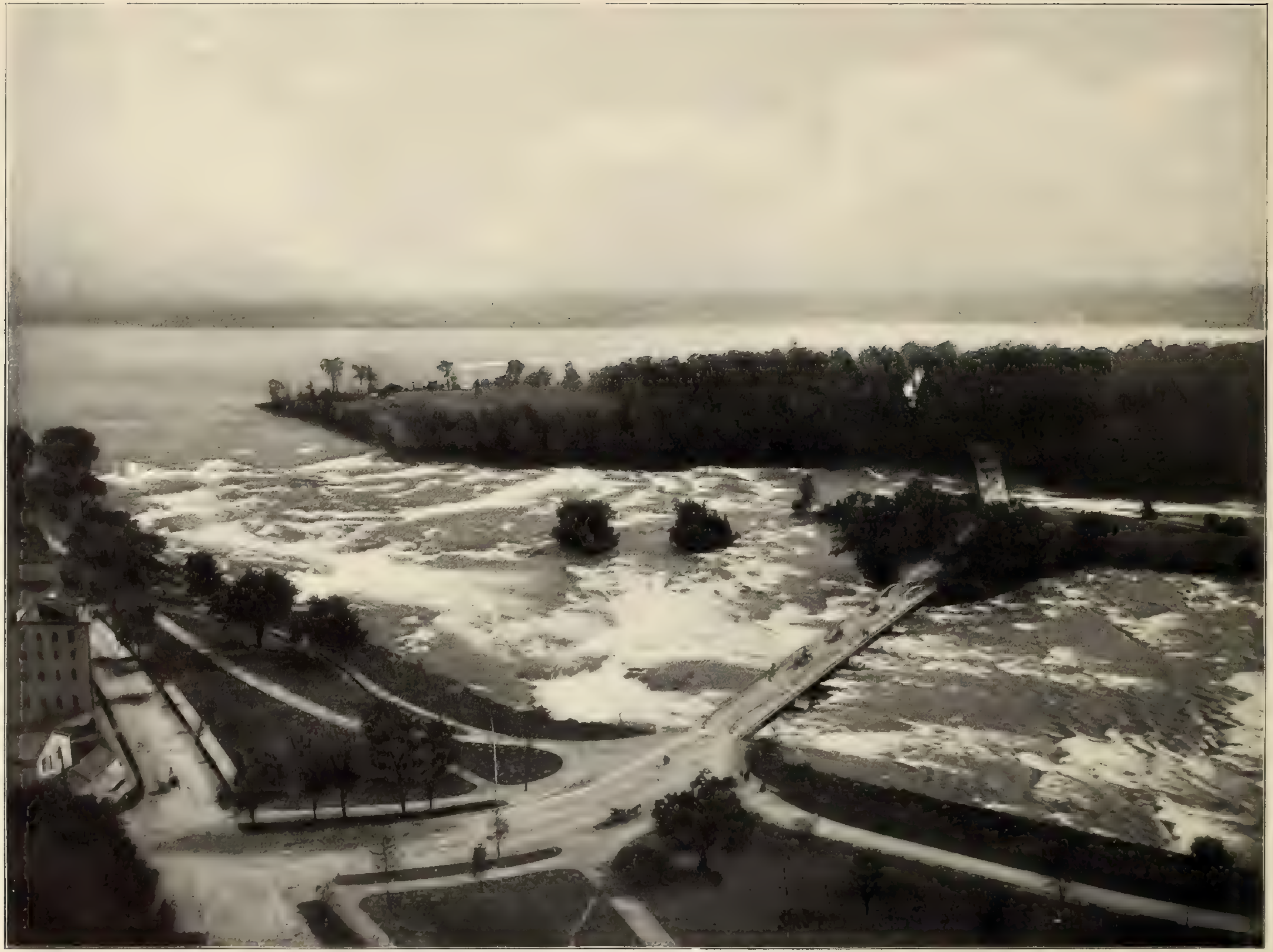
AMERICAN FALL, FROM THE CANADA SIDE

The one thing which arrests the attention in looking from the Canadian side toward the American is, secondary to the beauty of the cataract to be sure, the greater activity upon the New York shore. Then, too, one notices that the water is falling over the American Fall in one unbroken sheet of equal depth seemingly. With the Canadian Fall, on the contrary, there is broken water upon either side and an oblique deflection of the flood which is notable toward the center or heart of the Falls. From many view points, therefore, the American Fall would be pronounced the more beautiful in symmetry, as it shows no ragged edge of rock. From a purely artistic sense, however, the Canadian Fall (but why Canadian when the international boundary line passes through its center as the center of the river's deepest channel), with its tumult of water and its beautiful green coloring, bears the palm. Close down upon the river front, as one looks across the gorge from Canada to America, appear the mammoth hotels which have made this spot famous as a resting retreat, not only for sight-seers, but for tourists seeking rest, recreation, health and social pleasures. Probably no other focal point of tourist interest draws with equal force from every quarter of the globe. The Falls of Niagara have been, are and ever shall be reckoned among the wonders of the world.



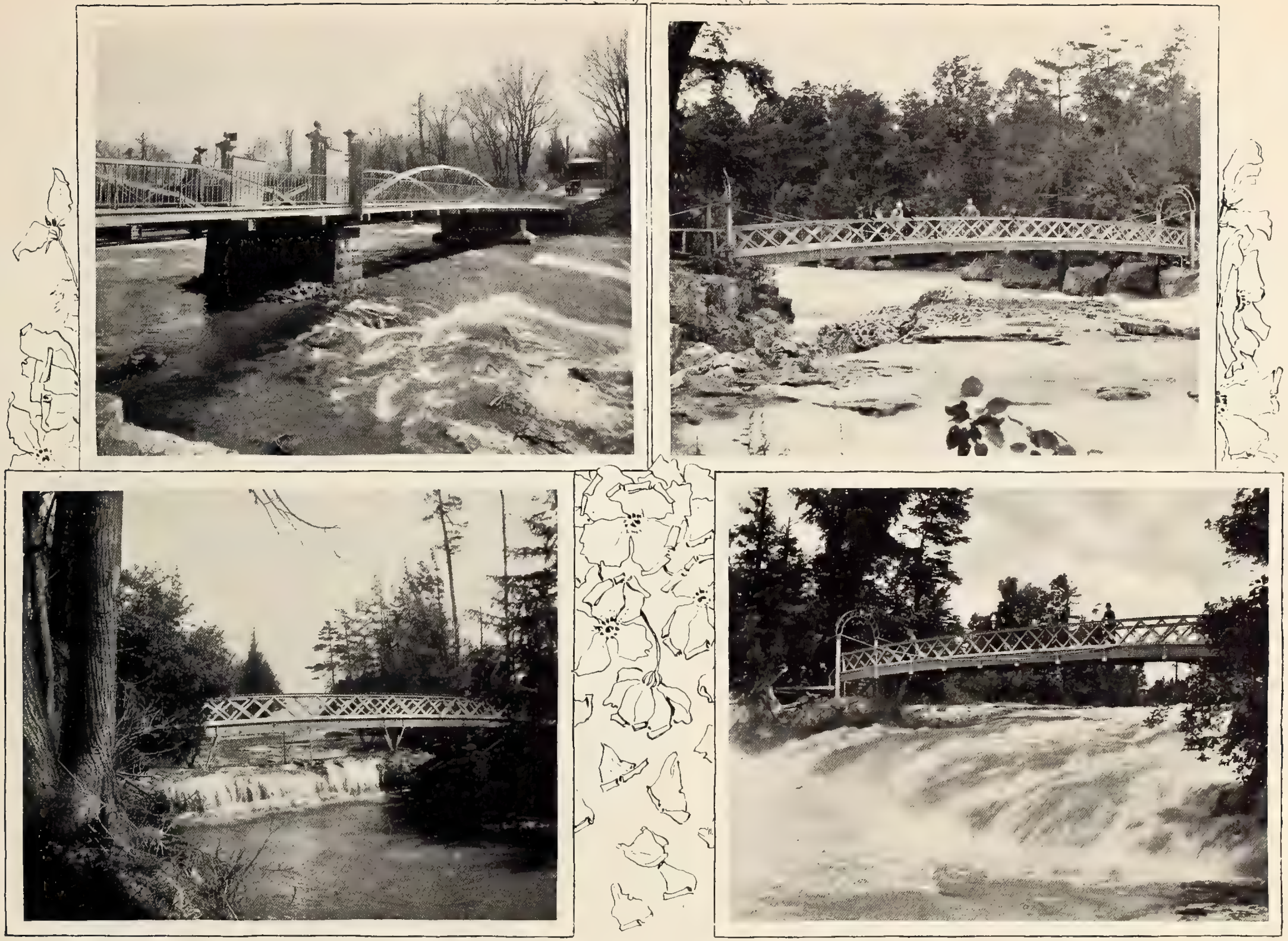
FALLS VIEW STATION, CANADA, ON THE LINE OF THE MICHIGAN CENTRAL RAILROAD.

The trains of the Michigan Central Railroad between Buffalo, New York, and Detroit, Michigan, cross the gorge of Niagara upon that company's own steel cantilever at Suspension Bridge, and make a brief stop to allow their patrons one of the finest views of the cataract obtainable at any point. This is Falls View Station, on the Canadian side of the river and directly opposite the "Heart of the Falls." One may from this sublime view-point witness the entire *ensemble* of the Falls, but the interest centres in the heart of the Horseshoe, where the waters gather to take the plunge, seeming to pause for an instant and accumulate into a dense wall which, lighted by the sunshine, takes on a beautiful sea-green color quite beautiful to see. Here one will note that the name Horseshoe, long since given to this Fall from its rememblance, is fast becoming a misnomer. It now more closely resembles the letter V inverted. The recession of this Fall is very rapid, and those who have known Niagara for from twenty-five to fifty years notice a very material change. This change of form has caused the greater volume of water to be attracted to the centre, and it is thus being gradually drained from the sides. The recently announced theory that explosions of compressed air occur regularly and frequently beneath the cataract, and occur most frequently beneath that point where the greatest flood descends, may account for the rapid recession of the Falls at this point.



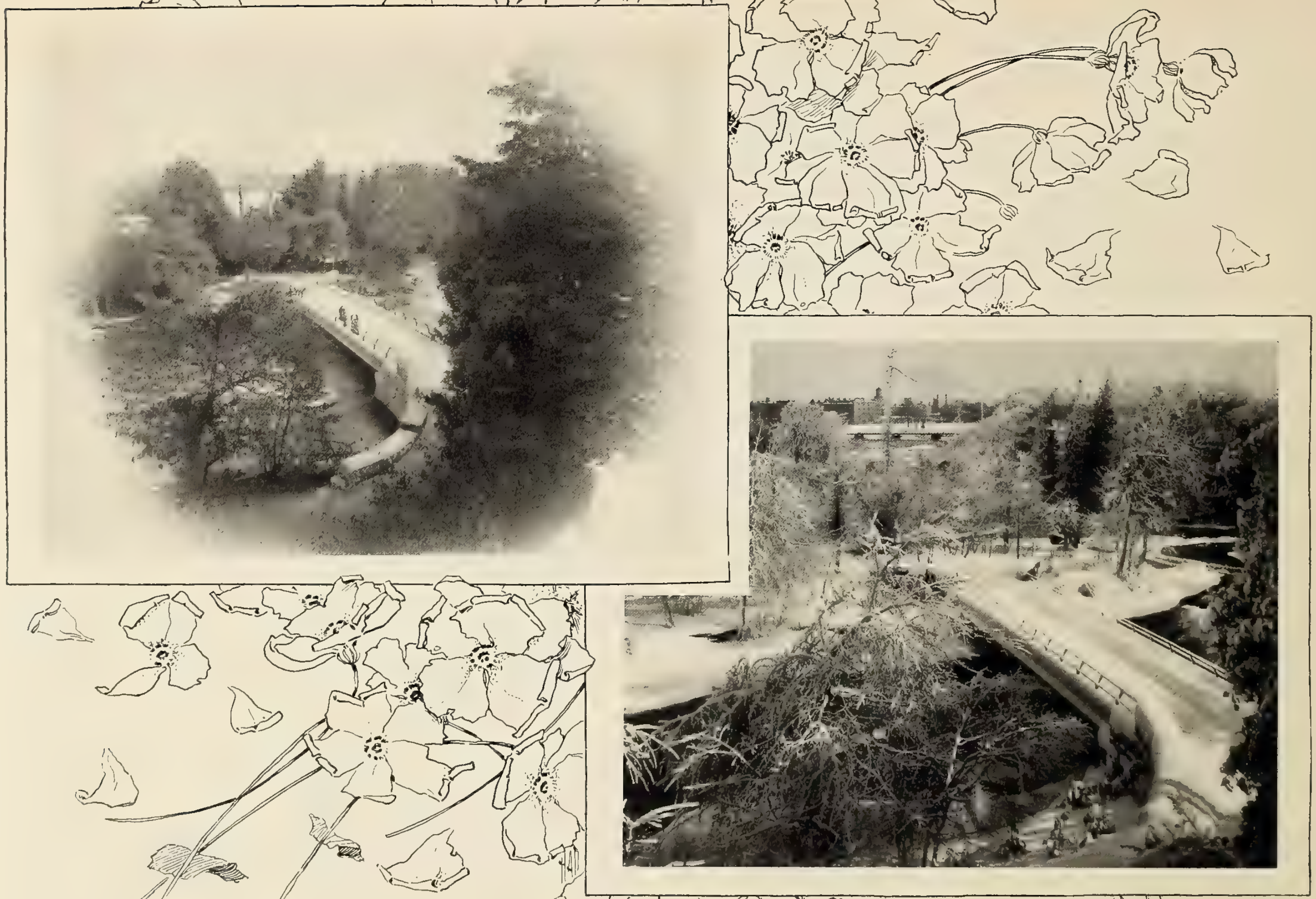
BIRD'S-EYE VIEW OF GOAT ISLAND AND AMERICAN RAPIDS.

This bridge across the rapids from the American shore first reaches Bath Island, which has an area of two acres; thence continues in a shorter span to Goat Island. It is free to carriage and foot passengers. The public vans of the reservation cross the bridge and make the grand tour of the Island and the Falls before returning. Goat Island contains sixty-two heavily-wooded acres. Upon the shore side of Bath Island are gates which cut off all approach to the two islands at night. In the river above and below Bath Island are other lesser islands; those above called Ship and Brig, from a fancied resemblance to craft of that class; and below, Blackbird, Crow and Robinson's Islands, reaching to famous Luna Island on the brink. When the State of New York acquired possession of its reservation one of the largest paper manufactories of America occupied Bath Island. Nothing more aptly illustrates the spirit of preservation of Niagara than the demolition of this paying piece of property by the state in the year following.



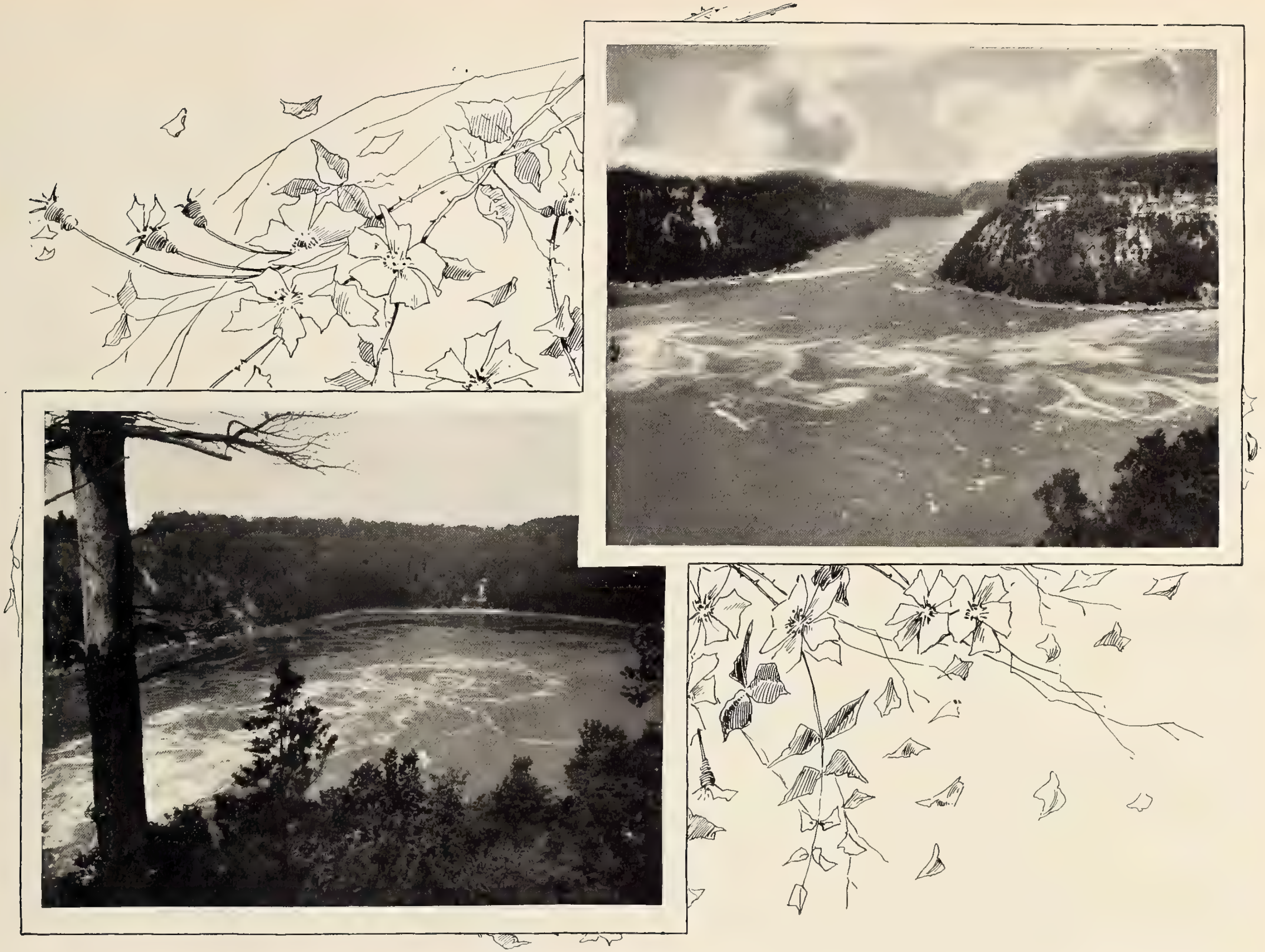
GROUP OF NIAGARA BRIDGES.

One particular feature of Niagara is that, although such a powerful flood, capable of limitless destruction if once it escaped its bonds, yet it may be closely approached with perfect freedom and without alarm. Numerous bridges span rapids of tremendous power. They are extremely picturesque structures and form remarkably pleasant lounging-places on a warm day. Overhung as they are by shade trees and cooled by the incessantly running waters, there is always present a stirring, grateful atmosphere. The system of foot-bridges connects all the principal islands of the cataract group with the American shore. Their construction, particularly of that one which reaches from the shore to Bath Island, thence to Goat Island, was fraught with great hazard and difficulty as it had to be thrown across the raging American Rapids, and before the cantilever principal of bridge-building was discovered. From a massive abutment of timber, constructed upon the mainland shore, other timbers were thrust out and secured upon the shore abutment by immense quantities of stone, while from the other end long piles were thrust down into the river-bottom. Across this structure was carried a large caisson filled with stones which being sunk in the river formed the foundation of the first pier, of which there are three, all thrown out in the same manner.



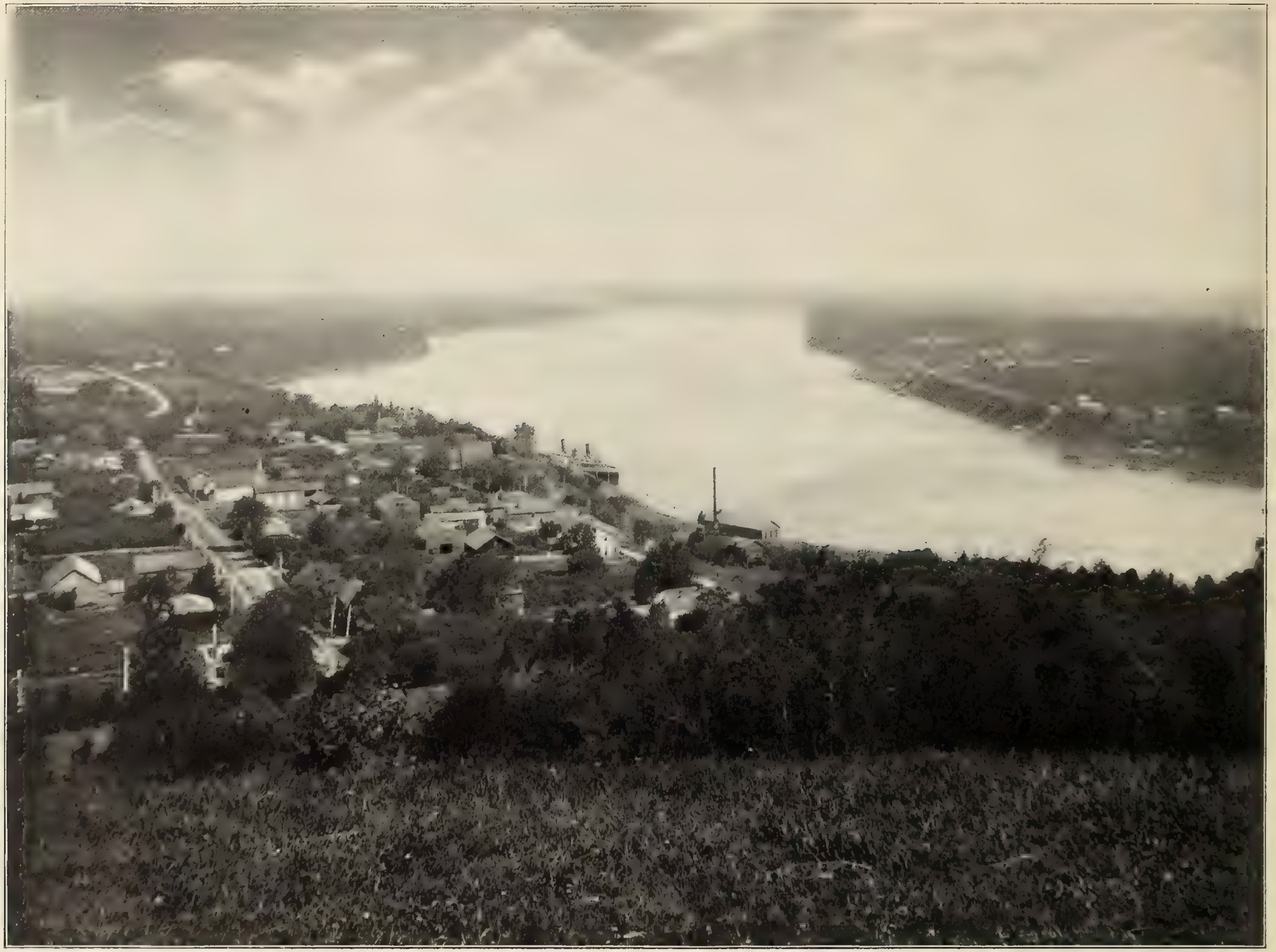
LUNA ISLAND BRIDGE—SUMMER AND WINTER.

As no visitor to Niagara omits Luna Island from his programme of sight-seeing, everything has been done to make the approach thereto, in beauty, worthy of that wonderful little isle. Without doubt, more tourists cross this bridge each season than tread any other pleasure-path in America. We present here two views, the summer and winter scene in combination. As may be readily seen, they are both from the same view-point. The lower or winter landscape is sharper in outline and permits a more comprehensive idea of the island's situation. In the distance appears the American shore with its great hotels at the water's edge. Immediately beneath is shown the long bridge across the river to Goat Island. This bridge, as well as Goat Island itself, must be traversed before one can reach Luna Island Bridge, for Luna Island, though nearer the American shore than its larger neighbor, lies in very rapid water and on the very brink of the cataract. Beneath Luna Island Bridge flows the tremendous flood of the Centre Fall. Evidently this torrent tore asunder the two islands in the numerous changes Niagara has made and is still making.



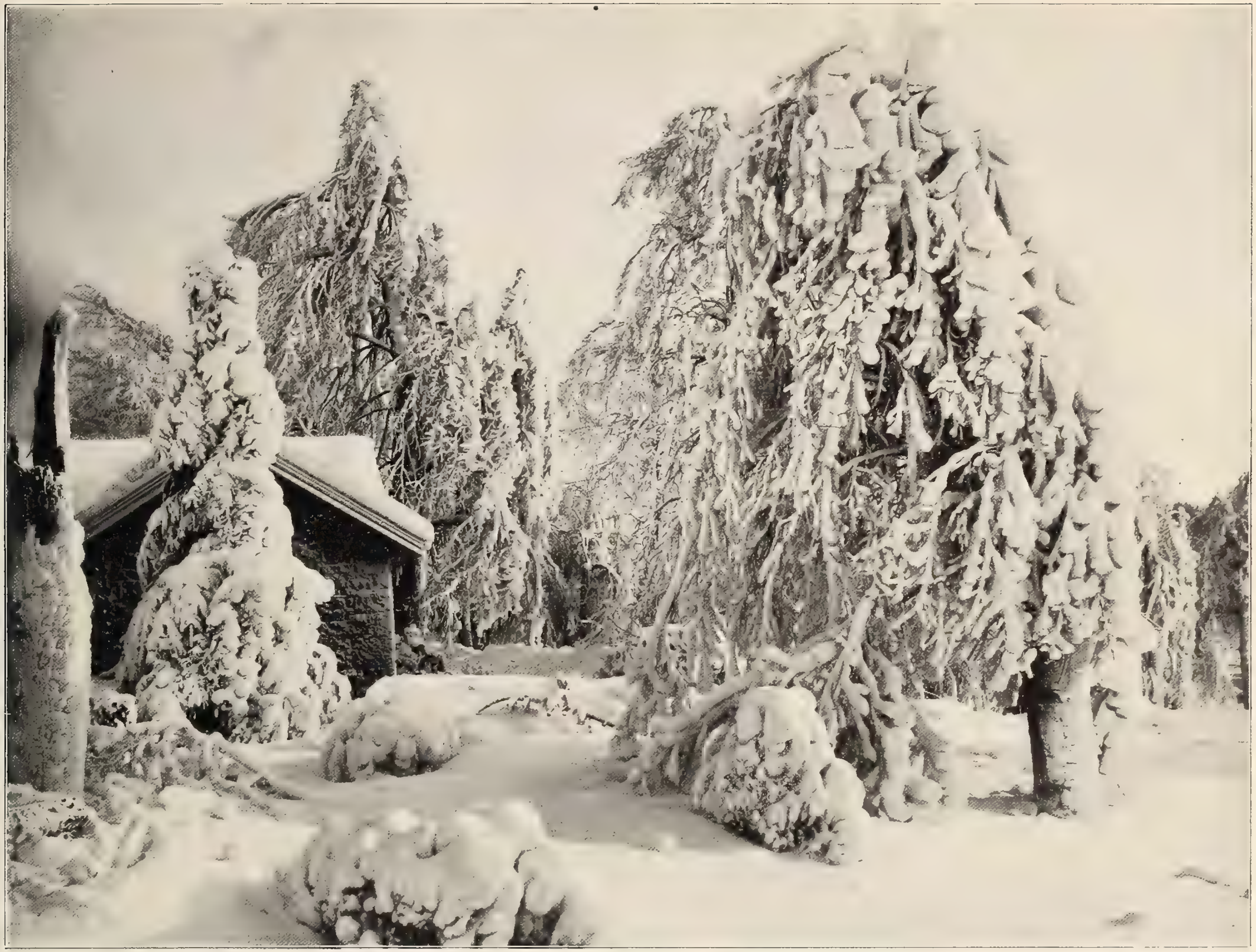
THE WHIRLPOOL.

Below the Whirlpool Rapids the river takes an abrupt turn to the right and flows at a direct right angle to its former course; in the apex of this angle occurs the basin of the Whirlpool. Here the confined waters of the river, fresh from the rapids, impinge with great violence against the surrounding cliffs in search of a passage out, circling round and round in a dizzy dance which raises the centre of this maelstrom from ten to forty feet above the level of the river. Above the Whirlpool upon all sides, save only where it is broken for the narrow exit of the waters, towering cliffs rise to a height of three hundred and fifty feet, whose precipitous sides facing the river have become smoothed by the action of the water. Foreign bodies float amid the eddies of the pool for days before finding the pathway out; all is ceaseless motion, the enormous depths boiling and eddying incessantly. This is the final tumult of Niagara. The gorge extends yet farther to Queenston, some seven miles below the Falls, where it issues from the table-land through which it has cut its way to the present Falls, but there is no more obstruction and after emerging from its chasm at Queenston Heights the Niagara flows on placidly for yet another seven miles to join its waters with Lake Ontario.



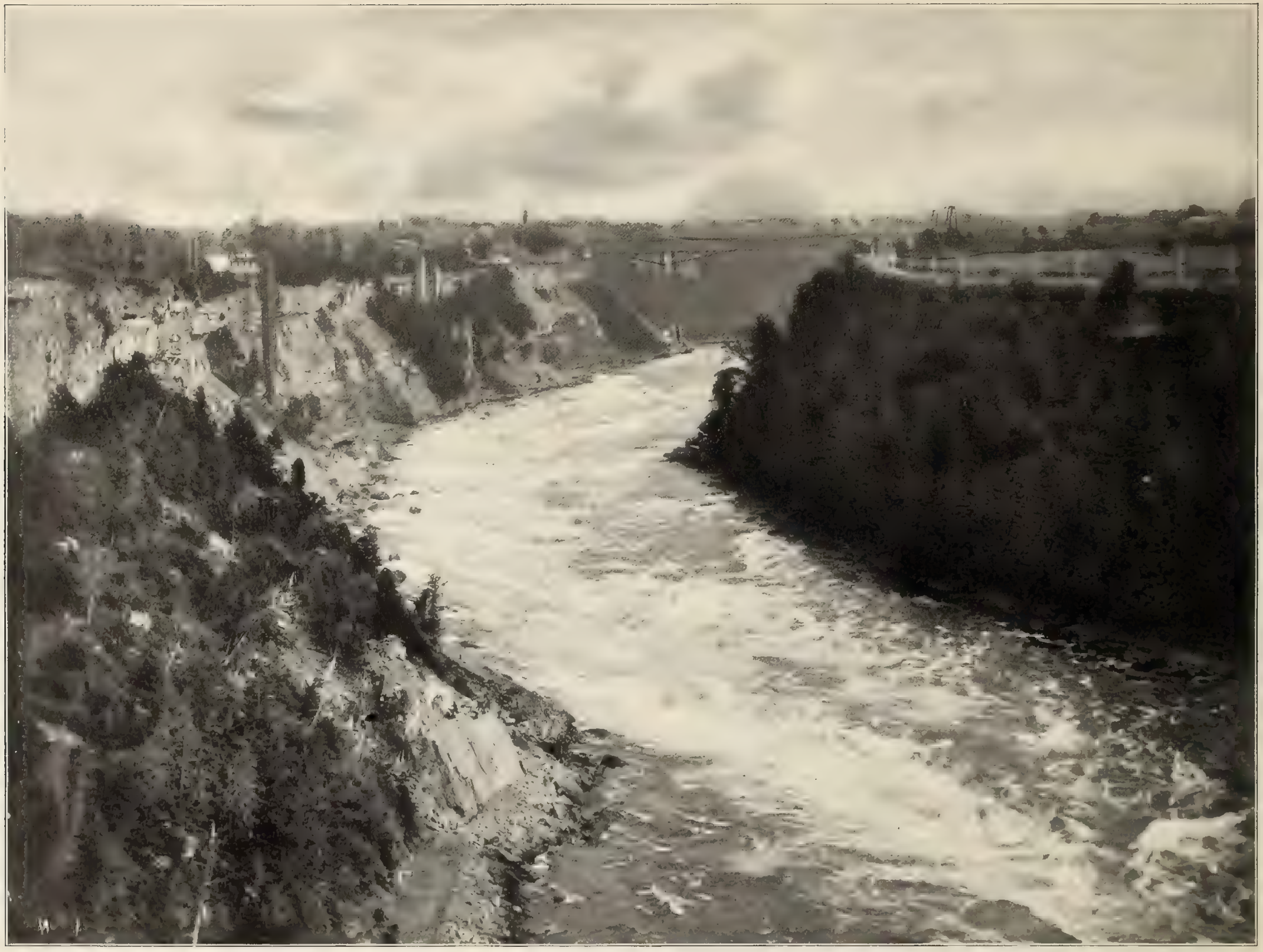
THE NIAGARA RIVER AND QUEENSTON, FROM BROCK'S MONUMENT ON THE HEIGHTS.

Below Queenston Heights, which holds the monument erected by the British Government to commemorate the services of Sir Isaac Brock, lies the beautiful village of Queenston, Canada, on the Niagara River, opposite the American village of Lewiston, New York. From the heights the road circles down the side of the mountain to Queenston, passing a tablet erected by the Prince of Wales to mark the spot where Brock fell, thence to the river's edge and the dock of the Niagara Navigation Company, whose steamers ply the lower river and Lake Ontario to Toronto. The view from this point is very beautiful. In the estimation of the Duke of Argyle the view from Brock's Monument was worth crossing the Atlantic to behold. The trip to Queenston by trolley forms one of the most popular Niagara journeys, which most fully illustrates the new order of things and the revolution in transportation methods wrought by electricity. What, before the advent of this force, would have been a journey of time and much expense can now be accomplished quickly and at an expense of but a half dollar. The route extends along the very edge of the gorge, introducing one to views which would be impossible by any other conveyance.



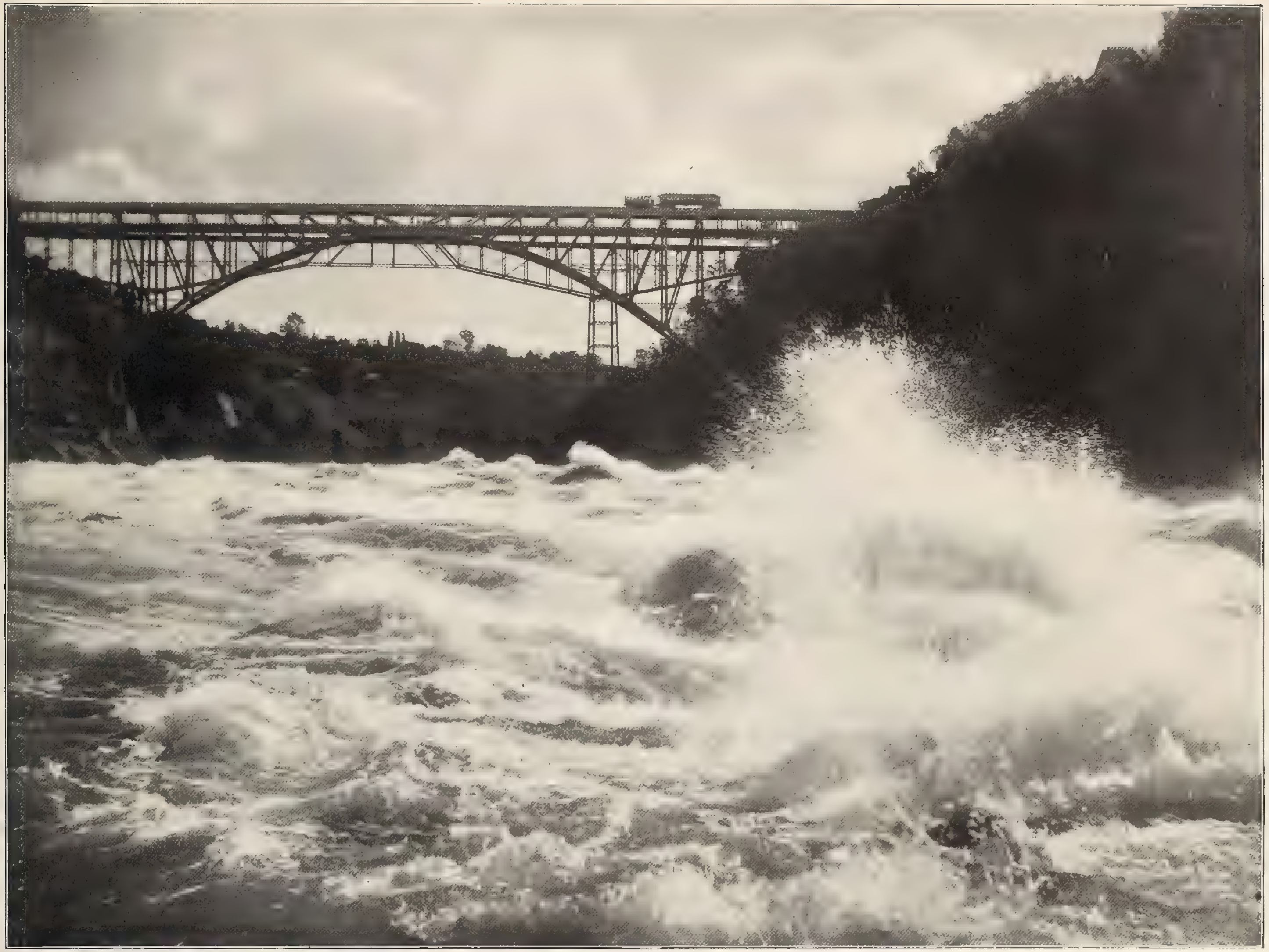
FROST-BOUND FOLIAGE, NIAGARA FALLS.

In bidding adieu to the Falls of Niagara one should ask one's self that question, which one hears so often propounded at the Falls,—"How did the cataract impress you?" Numerous are the replies to this query. Some are very susceptible to the beauties of Niagara; others lay great stress upon its power; while others, alas, express disappointment. The latter class are, we stand convinced, those who fail to push their investigation into every feature of the Falls. The series of pictures herewith includes photographs from both points of view; from the bottom of the gorge looking up toward the descending flood, as well as from the river level above the Falls. The only feature of Niagara which we have failed to catch and imprison here for the visitor's after-enjoyment is the roar of the falling waters, the tumult of noise which has been heard at Buffalo, twenty-two miles distant, and even as far as Toronto. This, however, is only during most favorable atmospheric conditions. Ordinarily the roar of the Falls does not prevent conversation even while in close proximity to the cataract.



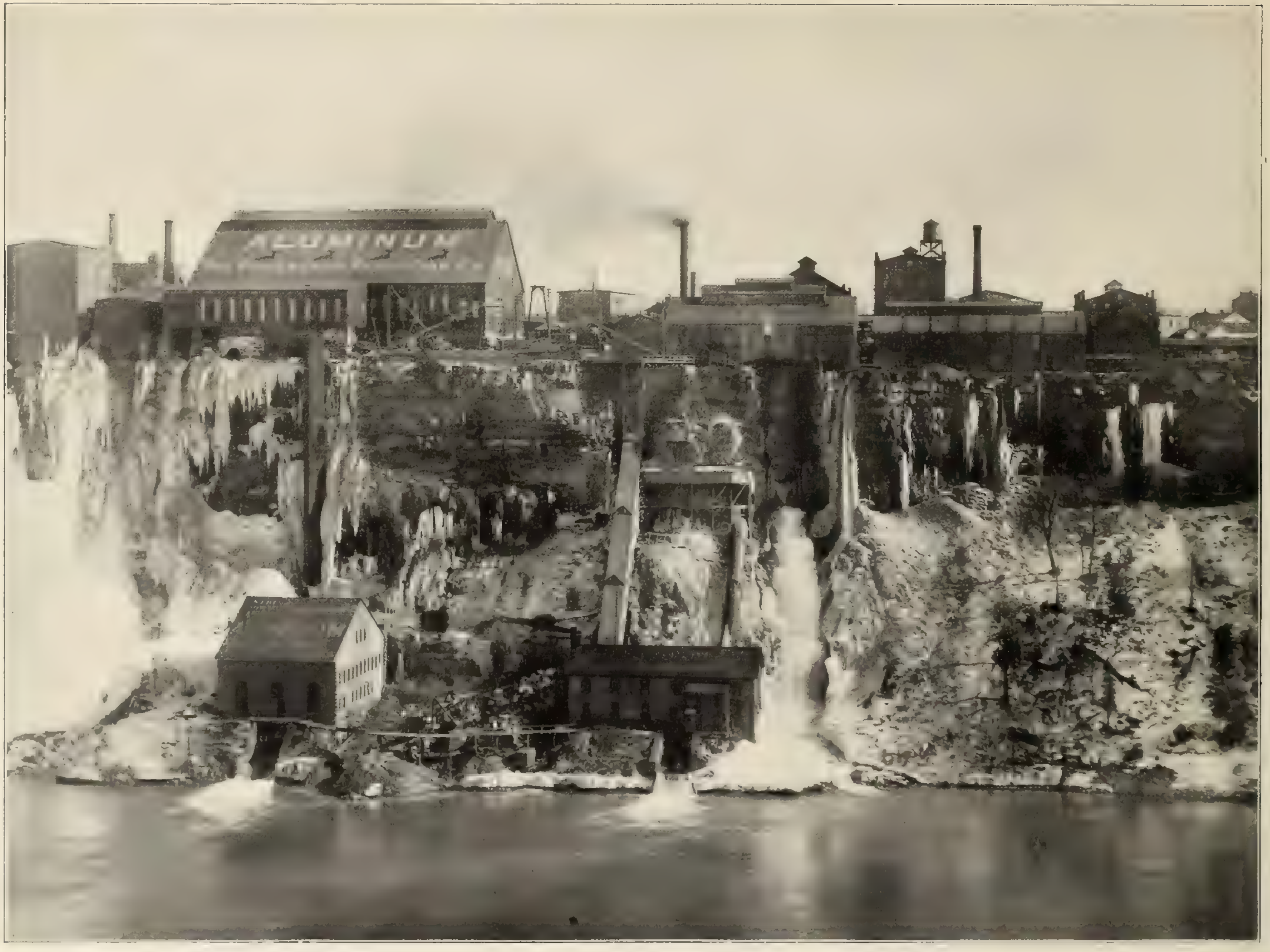
THE GORGE AND WHIRLPOOL RAPIDS.

Viewed from the two railroad bridges, the narrow gorge, filled with the turbulent waters of the Whirlpool Rapids, leaping one hundred and fifty feet below, forms a scene never to be forgotten. The entire bed of the river is filled by the white, foaming torrent. Through this flood venturesome spirits have in times past essayed to pass. It is the scene of several barrel episodes and also of Captain Webb's fatal swim, July 4, 1883. This hero, who had leaped from a steamship in mid-ocean to rescue a sailor; who had swum the English Channel naked; had startled America by swimming from Sandy Hook to Manhattan Beach during a storm which caused many vessels to seek harbor, and performed divers other feats of skill and endurance, succumbed to the power of these rapids. It is indicative of the wild appearance of the flood in the Whirlpool Rapids that many of the throng who witnessed the attempt doubted that the fiercest of the torrent had been attempted, believing that the swimmer had left the water at some advantageous point unobserved. This idle story was set at rest by the finding of the dead swimmer's body four days later floating upon the surface of the Niagara River below the Whirlpool, some five miles below the point where he lost his life.



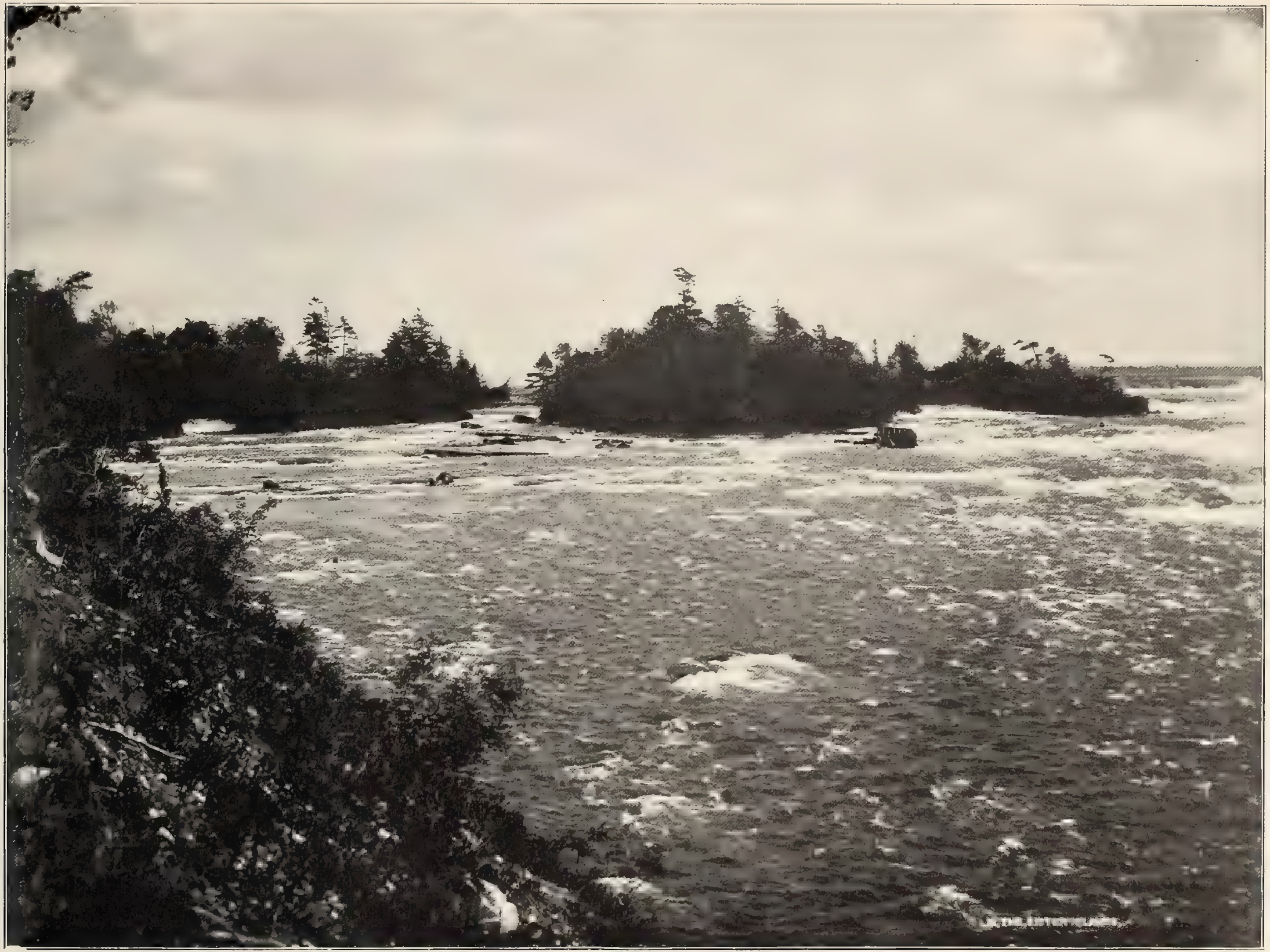
THE UPPER WHIRLPOOL RAPIDS.

Beneath the railroad bridges, which for obvious reasons are placed at the narrowest point of the gorge, flow the famous Whirlpool Rapids, gathering in strength and fierceness until the culmination of the whole is reached in the boiling caldron of the Whirlpool itself, some three miles below the Falls. At the rapids the river flows through the contracted walls of the gorge, and the waters are compressed into such limited space that they leap aloft in angry billows twenty to thirty feet above the river level. As far as the eye can reach the river is tossed into a surging, struggling mass of foam-clouded billows, whose noise of conflict is deafening, racing onward, impelled by the enormous backing of the united waters of Lakes Superior, Michigan, Huron and Erie, taking a descent of one hundred feet to the mile, in depth estimated at three hundred feet, through confining, rocky walls but three hundred feet apart, and at a speed of twenty-seven miles an hour. Fierce as are these waters, the original "Maid of the Mist," a steamboat of one hundred and seventy tons, built below the Falls for a similar purpose as the present steamboat of the same name, but proving at that time unprofitable, was safely navigated through them to the St. Lawrence.



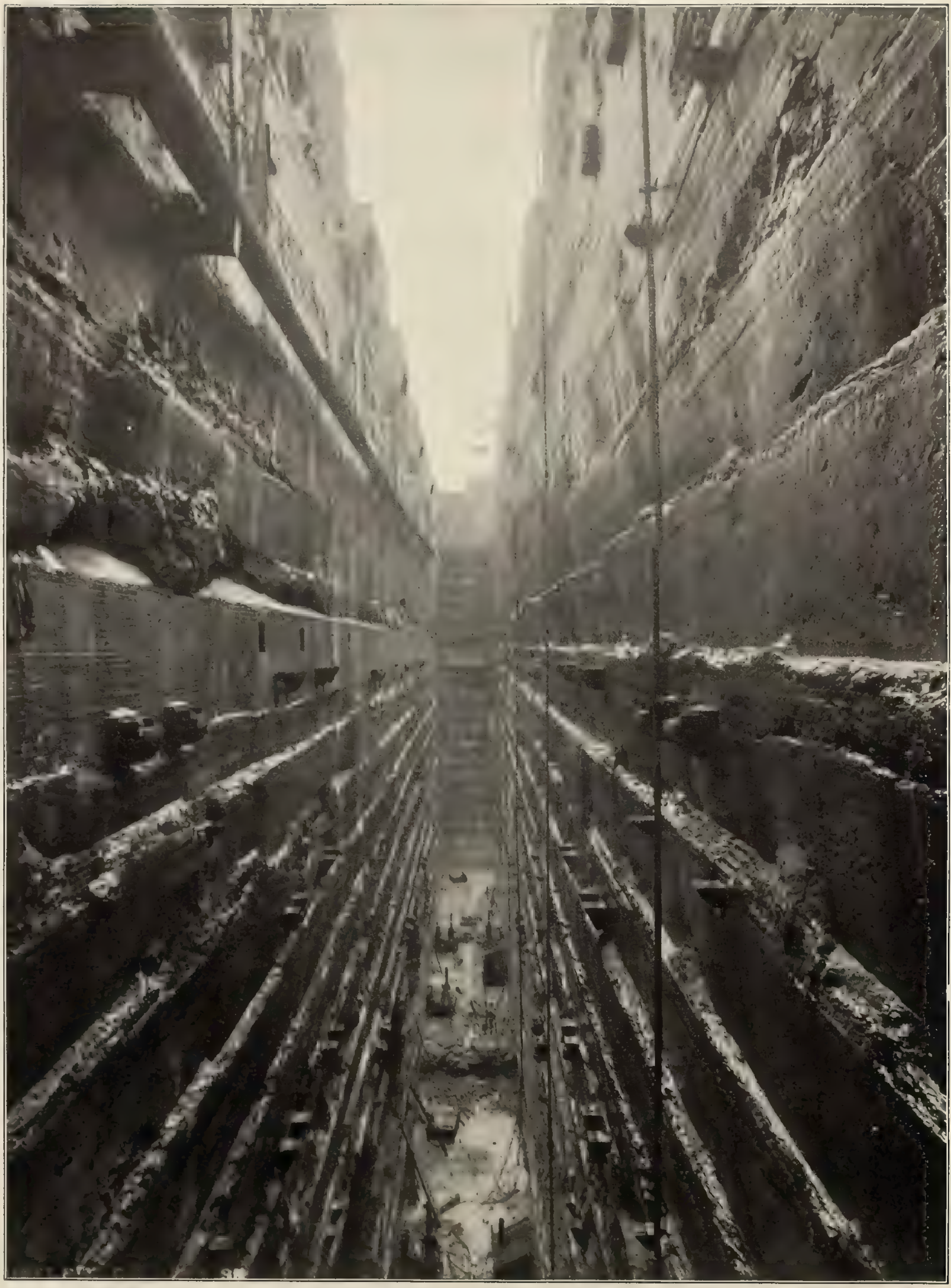
THE MILLING DISTRICT, NIAGARA FALLS, NEW YORK.

Niagara's great future depends as much upon its growing reputation as a manufacturing centre as upon the attraction which the Falls themselves exert upon the tourist throng. A short time has passed since the two villages of Niagara Falls and Suspension Bridge, two miles distant, were separate communities, together containing a population of 10,000 souls. To-day they are one city with the former intervening space well built over with business houses and handsome homes, with a population of 20,000. The great factor in this rapid development has been,—what has been so keenly felt in many another section of our country,—electricity. The city of Niagara Falls now has manufacturing development of 200,000 horse-power in sight and 350,000 in anticipation. Based upon the population at the other great manufacturing centres of the country dependent upon their water-power advantages, when the total power of Niagara now in sight is completed the city should have a population of one and one-half millions. Who knows but this is destined to be the great industrial centre of the world, a city extending from Lake Erie to Lake Ontario? Already the city limits extend far beyond the suburban settlements and speculation in sites is most active.



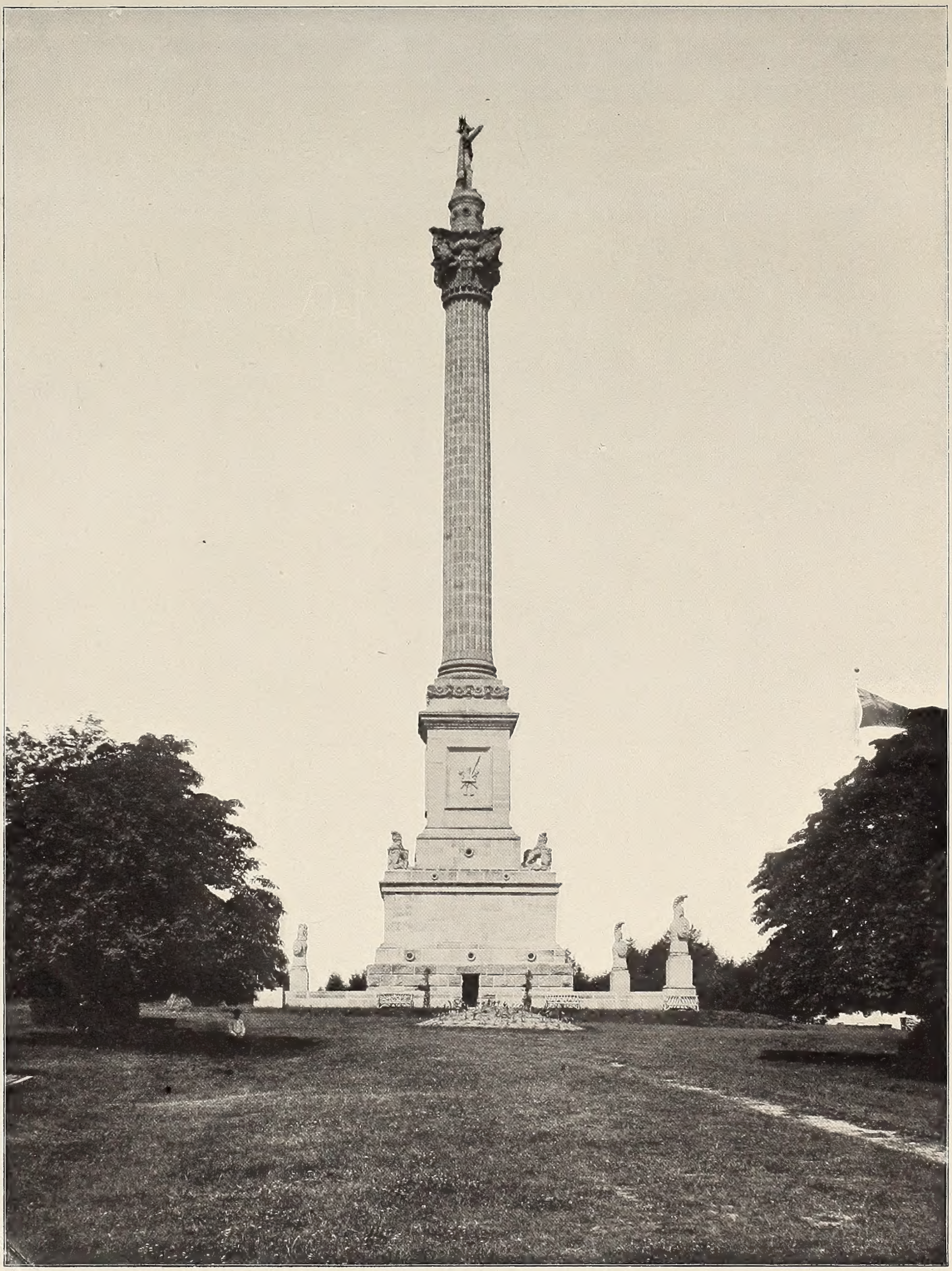
THE THREE SISTERS ISLANDS.

From the southern or farther shore of Goat Island, where the current races to the Horseshoe Fall at a speed of twenty-eight miles an hour, a series of bridges reach to three romantic little islands which lie out in the river in one, two, three order toward the Canadian shore. These bridges were constructed in 1868, and certainly open the grandest view of the rapids above the Falls obtainable at any one point. From the head of the farther isle of the three one continuous cascade greets the eye, extending from Goat Island across to the Canadian shore, varying from ten to twenty feet in height. The bridge to the first Sister Island spans the Hermit's Cascade, so called from the hermit of the Falls, Francis Abbott, who used to bathe in its waters. The troubled torrent as it pours down its tortured flood toward the brink of the precipice contains much of beauty, much of grandeur, a fitting introduction to the Falls themselves.



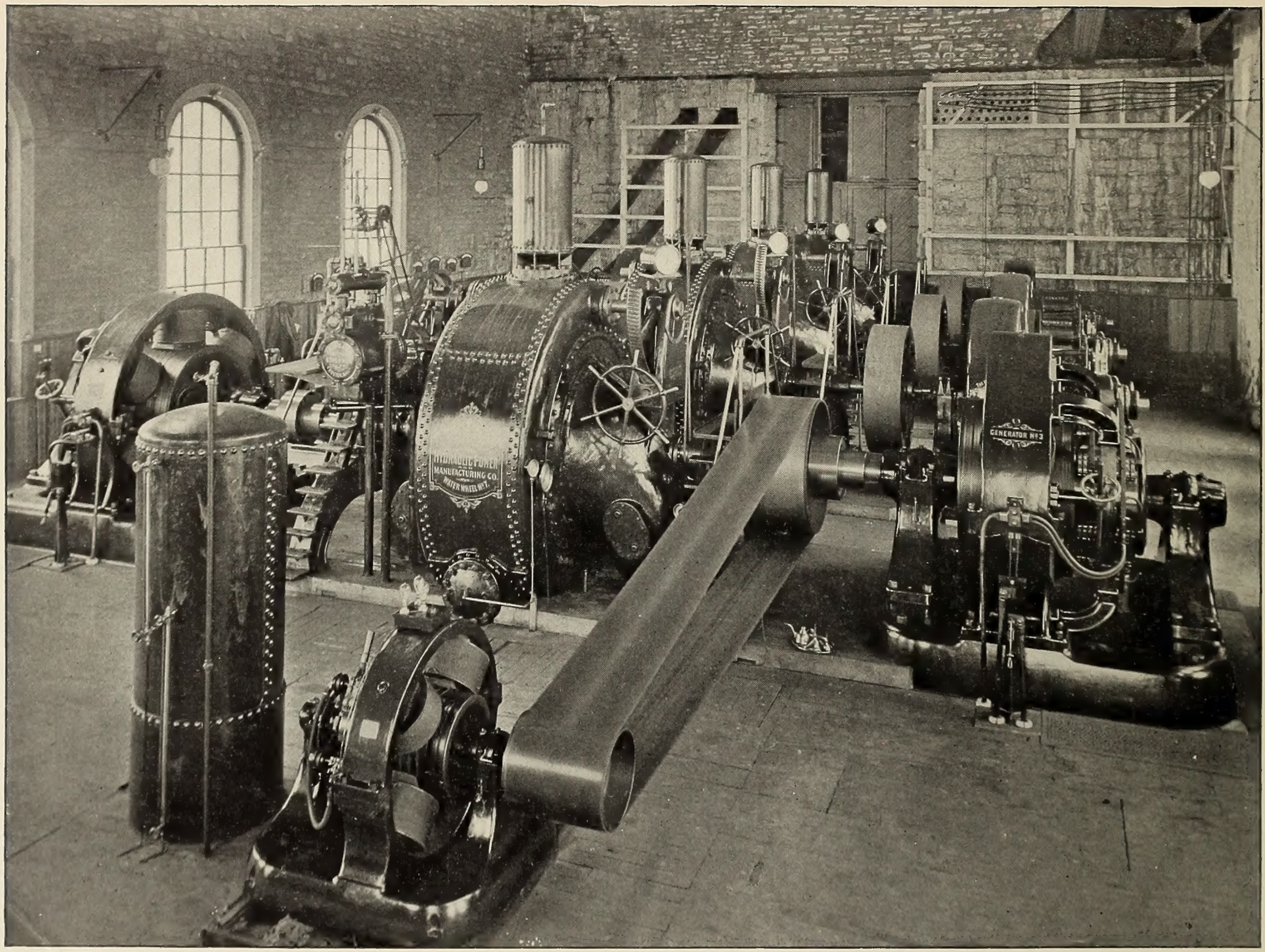
WHEEL-PIT — NIAGARA IN HARNESS.

This wheel-pit, wherein is subjected the power of Niagara, is an excavation 178 feet in depth, and is connected with the main tunnel, which serves the purpose of a tail-race, 7,000 feet in length with a slope of six feet in one thousand. This tunnel is one of the most interesting and stupendous mechanical contrivances extant; most fitting adjunct to the Falls themselves. It is excavated from the wheel-pit, directly beneath the town, to a discharge into the river but a short distance beyond the "Maid of the Mist" landing at the foot of the gorge. The tunnel has a maximum height of 21 feet and a width of 18 feet, 10 inches, making a net section of 386 square feet. The slope is such that a chip thrown into the water at the wheel-pit will pass out of the portal in three and one-half minutes, showing the velocity of the water to be 26½ feet per second, or almost twenty miles per hour. In this great work 600,000 tons of material were removed; 16,000,000 bricks, 19,000,000 feet of lumber and timber were used, besides 60,000 cubic yards of stone, and 55,000 barrels of Giant American Portland cement, 12,000 barrels of natural cement, and 26,000 cubic yards of sand. Over one thousand men were engaged in the construction of this tunnel for more than three years.



GENERAL BROCK'S MONUMENT. QUEENSTON HEIGHTS.

As is usual with border points so narrowly separated as are the United States and Canada, the whole course of the Niagara River holds much of historical interest in connection with the America–Great Britain differences, particularly the War of 1812. The same may be traced back through the old French and English struggles for supremacy in North America, which culminated in the downfall of Quebec before Wolfe's victorious army in 1759. In ye olden time a line of forts extended along the entire length of the river, and both the United States and Canada have outposts there to-day. A monument erected by the British Government to perpetuate the memory of General Sir Isaac Brock, who commanded the English forces at the memorable battle of Queenston Heights, stands upon the battle-field at that point, overlooking the Niagara River, eight miles below the Falls.



POWER HOUSE — INTERIOR.

Part of the harness of Niagara is here shown, — interior of the power house, Niagara Falls Hydraulic and Manufacturing Company. It is not that late enterprise, however, which appeals most strongly to the senses as a subduing of the cataract. The water which turns the wheels for this concern is taken from the river a short distance above the rapids on the American side by a surface canal, through which it flows, a distance of 4,400 feet, to the milling district below the Falls, there falling through numerous tail-races to the bottom of the gorge. Ground was first broken for this surface canal in 1853, and in 1858 a canal thirty feet wide and six feet deep was finished. Disturbed financial conditions, occasioned by the War of the Rebellion, prevented the building of mills to use the water from the canal until 1870. Since that time building has been steadily active until at the present time it supplies 7,525 horse-power (water) and 5,105 horse-power (electric) to eighteen different manufactories. Two distinct methods were adopted for constructing the wheel-pits for these mills. In one a shaft was sunk some distance back from the edge of the gorge, in which the wheels were placed, and a tunnel driven from the face of the bank to meet the shaft for the discharge. In other cases a notch was cut in the edge of the bank and the wheels placed therein. This explains the different appearance of the tail-races as will be noted in our picture of the milling district.